



CFCM

CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

Corporate Profile Issue

PLUS

- Industrial Finishing
- Plating and Anodizing
- Paint and Coatings Manufacturing

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JANUARY/FEBRUARY 2019

Caps'n Plugs®



We have the best prices and fast delivery for all our masking products.



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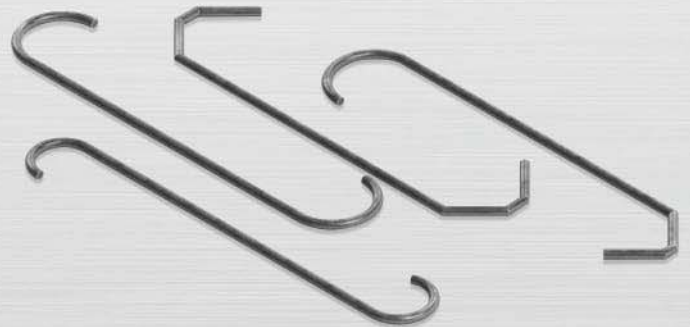
If our standard masking doesn't suit your application we can design and quote an economical custom solution. We can provide prototypes in either moulded hi-temp silicone (3 week lead time) or 3D printed simulated silicone (2-3 days lead time).



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We stock a large inventory of the most popular paint line hook styles, wire diameters and lengths in our Brampton, Ontario warehouse for immediate delivery.

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Caps'n Plugs is a leading Canadian distributor and custom manufacturer of plastic injection parts, vinyl dip parts and high temperature resistant rubber/silicone coating/plating masks. We have an extensive product line of caps, plugs, grommets and handle grips for shipping protection, paint/plate masking and product finishing for virtually any application. Please visit our website catalogue at www.capsnplugs.com.

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Caps'n Plugs has the largest stock of standard paint/plating masking products in Canada including a variety of caps, plugs, silicone tubing and compressible silicone cord. All can be used for high temperature powder coating, e-coating, spray painting and plating. All our stock silicone or EDPM rubber parts are durable to withstand repeated coating and bake cycles.

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without leaving any residue behind. We are able to manufacture in-house on our high speed die-cutter virtually any shape or kit of tape masking as per our customer needs.

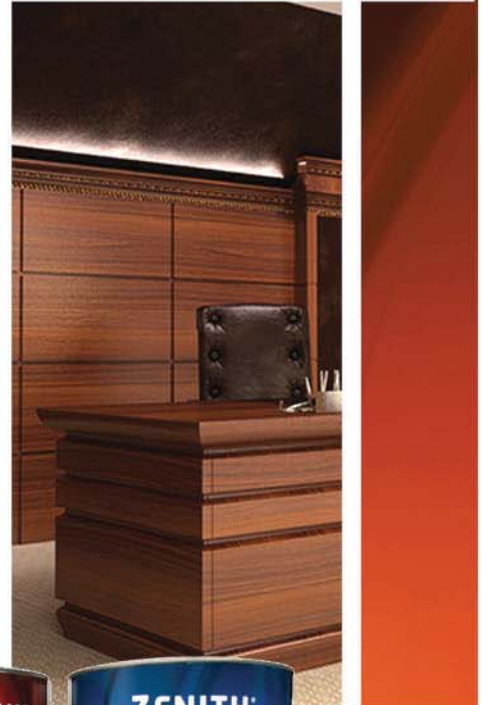
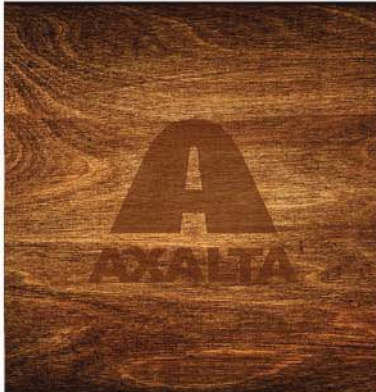
Hooks

We have a large inventory of the most popular sizes of paint line hooks. These hooks come in four basic configurations in several different diameters of wire depending on the part weight to be hung and a variety of hook lengths. All hooks are made from high quality spring tempered steel suitable for powder coating and e-coating processes.

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Our sales team is focused on finding solutions for our customers. If the required mask does not exist in our standard product line, we can design, prototype and produce the correct part. We can prototype custom designed prototypes in-house within two to three days on our 3D printer to create a simulated parts in the required durometer for fit/function analysis by the customer. Although these 3D printed prototypes can not be coated and baked, a careful analysis of the part fit will tell whether the part design will work satisfactory or design changes are required.

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Stone Tucker Instruments is also a Canadian distributor for MBX Bristle Blaster, TQC field and lab test equipment, Testex Replica Tape, salt test kits and salt removal solutions from Chlor*Rid International, Tinker & Razor and PCWI high and low-voltage porosity detectors, durometers and precision thermometers by PTC, and precision measuring instruments from Cooper-Atkins and Fluke, all in stock and serviceable at both locations.

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With more than 30 years' experience in a variety of industries, NACE-Certified Coatings Inspector and Marine Coatings Specialist, Bob Tucker, brings a unique level of expertise to customers due to his first-hand knowledge of coatings project requirements. Our Ontario Technical Sales Manager, Tyler Heywood, is also NACE-Certified with many years of experience both as an inspector and technical sales representative with major coating manufacturers. Other personnel receive factory training on a variety of products, have completed the SSPC Inspector Workshop, and receive ongoing in-house training. Technical knowledge coupled with real-life, in-field experience ensures that STI offers exceptional customer service and support for all our instrument lines.

Stone Tucker Instruments serves Eastern Canada from 51 Scott Street West, St. Catharines, Ontario, and Western Canada from Unit 110, 1803 - 91 Street SW, Edmonton, Alberta.

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A New Start

As many of you are aware, our legendary publisher, Pete Wilkinson, was diagnosed with multiple myeloma last year, a cancer that forms in the plasma cell. Plasma cells are a type of white blood cell that help fight infections by making antibodies that recognize and attack germs. Multiple myeloma causes cancer cells to accumulate in the bone marrow, where they crowd out healthy blood cells.

In December, Pete underwent chemotherapy and a stem cell transplant. It was a long and tough process but he endured with such unbelievable positivity as many of you know. I have the privilege to report the cancer is in remission! Pete and all of

us at CFCM want to say thank you for all of your notes and well wishes. Your continued support made a huge difference and means a lot.

So, the theme is set for a year of renewal. With this, my first issue of CFCM, thank you all with whom I have spoken and interacted, for sharing your abundant knowledge as I step into this new role. We have hired another new face, Gillian Thomas, as Associate Publisher and Sales. You will be seeing both of us at shows around North America throughout the year. We are excited to meet everyone and learn all about this varied and changing industry!

We hope to bring a few new things to the table. We've got some ideas to



spruce up the website and magazine, with ideas for more digital opportunities to give those of you who advertise, more opportunities to reach more people.

And please follow us on Twitter @CFCMMag! We're here to be a forum for sharing within the industry and want to hear from you. Email, call, direct message – we'd love to hear your ideas, concerns and just chat about the industry!

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Chemetall to Acquire the Automotive Paint Detackification Business of Polymer Ventures, Inc.

The Surface Treatment global business unit of the Coatings division of BASF, operating under the Chemetall brand, has reached a conclusive agreement to acquire the automotive paint detackification business of Polymer Ventures, Inc., including all of its shares of Galaxy Chemical Corp.

The paint detackification technology is a process used to capture and neutralize paint overspray, and complements Chemetall's surface treatment products which are designed to optimally prepare metal surfaces for the painting process and ensure proper coating adhesion. The transaction culminates a long-standing partnership between the two organisations whose customer portfolios fully align.

The company says the purchase will provide customers with best-in-industry value: by streamlining the combined supply chain; enhancing service through the organizations' mutual commitment to meeting technical requirements with expanded in-field representation and industry specialists; new products through global R&D resources, and stronger manufacturing and processing capabilities.

www.basf-coatings.com

**Therma-Tron-X
Commemorates 50 Years**

Therma-Tron-X, Inc. (TTX) is celebrating its 50th anniversary this year. From conception in 1969, TTX's objectives have emphasized innovative solutions and designs, quality craftsmanship, and continuous improvement. Having grown to more than 250 team members today, the organization is a leader in the design and manufacture of industrial finishing systems and industrial water treatment equipment.

"The last 50 years have given us plenty of reasons to celebrate," says Brad Andreae, COO, Therma-Tron-X, Inc. "Our industry has progressed in all areas including quality, technologi-



cal advancement, and service to our customers. Through the years, TTX has played a critical role in defining the paint finishing business and we

are proud of our involvement in bringing the industry to where it is today. Metal finishing isn't just for aesthetics anymore, but plays a huge part in the function, quality, and durability of the part. There are many challenges on the horizon, but our future looks very bright."

TTX says it wants recognize all that's been achieved over the last half-century and looks forward to the opportunities that lie ahead. There will be a series of special events in 2019 including celebrations to mark the anniversary at each of the trade shows and conferences the company attends.

The website site will feature a 50th year page that takes a historic look at the evolution of

Therma-Tron-X, Inc.

Therma-Tron-X, Inc. designs, fabricates, and installs innovative, custom paint finishing systems for hundreds of contract shop coaters and OEMs. TTX offers turnkey services including multi-stage pretreatment equipment using spray, immersion or a combination; industrial ovens fitting desired spatial needs and utility requirements; environmental rooms offering ideal powder paint application conditions; liquid spray booths balancing airflow and minimizing overspray; and material handling solutions designed to fit individual needs. TTX Environmental develops water and wastewater treatment systems that minimize operational costs and environmental impact. From start to finish, TTX will automate every step and integrate the finishing system with the facility.

TTX's revolutionary SLIDERAIL SQUARE TRANSFER® (SST®) material handling system performs high volume finishing operations using a fraction of the space required traditionally. Modular Econ-E-Coat® systems are specifically designed to be portable. Monorail, Power and Free, and custom conveyor systems carry parts through paint application processes while fully automating manufacturing facilities and efficiently transferring product between manufacturing, finishing, and final assembly/shipping areas. Programmable hoists are custom designed and built to serve wide varieties of industrial finishing processes and can be integrated with multiple styles of conveyor systems. The TTX Automated Conveyor Carrier System® (TTX ACC®) is a flexible and cost-effective material handling solution that utilizes a wireless network to send instructions to individual carriers throughout your paint line. ACCs are hung on an overhead

I-Beam rail and use an adjustable friction drive wheel to maneuver. All TTX systems are PLC equipped.

Successful companies rely on TTX's knowledge and experience in coating technologies, equipment development and water and wastewater treatment solutions. Research and development, innovative designs, quality workmanship, project management, and superior service bring customers from all over the world to TTX's doorstep.

- Pretreatment Equipment
- Industrial Ovens
- Environmental Rooms
- Liquid Spray Booths
- Material Handling Solutions
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- TTX ACC
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Therma-Tron-X and its defining moments. A photo exhibit will capture the history of the TTX family and equipment.

www.txinc.com

Sensory Analytics NAMES Manutrol Inc. As Canadian Sales Partner

Sensory Analytics, the supplier of SpecMetrix coating thickness measurement systems, has named Manutrol Inc. as its new international sales and support network partner for Canada. Manutrol is a Canadian provider of processing equipment and laboratory systems with decades of experience tailoring technical solutions to best meet customer needs. The company says this new customer-focused alliance will help strengthen SpecMetrix systems' position as a global market leader in real-time coating thickness measurement solutions.

"We are excited to add another high-performing organization like Manutrol to our expanding list of global network partners," says Wendy Mancino, North America Sales Support Manager for SpecMetrix Systems. "With their extensive knowledge of Canadian coating and manufacturing environments, Manutrol will help drive the adoption of our next-generation coating thickness and film layer measurement solutions to the benefit of our manufacturing customers."

Murray Steeves, Sales Manager for Manutrol Inc. adds, "Manutrol is always looking for the most innovative, high-quality products for our Canadian clients. We are pleased to now represent SpecMetrix systems in Canada and look forward to offering their industry leading non-contact wet and dry coating thickness measurement systems for on-line and lab applications to the varied markets that we serve."

www.specmetrix.com

AGC to Expand Production of Resin Used in High-Frequency Printed Circuit Boards

AGC is significantly expanding its production capacity of Fluon+ EA-2000 fluorinated resin by establishing a new facility at its plant in Chiba, Japan. Fluon+ EA-2000 is primarily used as a material for 5G high-speed, high-frequency printed circuit boards, which will see a sharp increase in demand as 5G network technology becomes widely available by 2020. Operation of AGC's new Fluon+ EA-2000 production facility will begin in September 2019.

Fluon+ EA-2000 is used for coating and protecting printed circuit boards because it provides

Nouryon Partners with Unilever, Others to Accelerate Chemistry Innovation



Nouryon (formerly AkzoNobel Specialty Chemicals) has officially launched the third edition of its Imagine Chemistry collaborative innovation challenge. Through this program, the company invites startups, scale-ups, university spin-outs, and other potential partners to tackle chemistry-related challenges and uncover new ways to create value for customers.

To increase the focus on developing business opportunities, Nouryon has expanded the number of Imagine Chemistry partners to include Unilever; seed investor High-Tech Gruenderfonds; and The Green Chemistry & Commerce Council (GC3), a collaboration that drives the commercial adoption of green chemistry.

"Innovative solutions that help our customers improve their products, become more competitive and sustainable, and uncover new business opportunities are central to how we work," says Charlie Shaver, CEO of Nouryon. "As partnership is the key to success, we are very pleased to add more organizations to our Imagine Chemistry network, including Unilever, one of our key customers."

For the 2019 edition of Imagine Chemistry, Nouryon is looking for solutions in the following five areas:

Sustainable bio-based surfactants for everyone (in partnership with Unilever):

- Novel bio-based, non-hazardous surfactants, as well as building blocks for new surfactants
- Performance-boosting nanoparticles: Small-particle solutions that can make customers' products more sustainable, durable, and/or functional
- Sensing in demanding chemical environments: Innovative sensing solutions to help Nouryon's chemical processes approach 100 per cent resource efficiency
- Label-free chemistries: Products with ingredients that require no chemical warning labeling that can safely and simultaneously control interface and fluid properties
- Pushing the frontiers of chemical innovation: An open challenge for innovative ideas on developing more sustainable chemistry

Participants can submit their ideas via a dedicated online community and receive expert feedback until March 8, when submission closes. In May 2019, 20 finalists will be invited to an intensive three-day event at the company's RD&I centre at Deventer, the Netherlands, to work with experts and business leaders to further develop their ideas into a joint value case.

www.imaginechemistry.com



CCAI Accepting National Scholarship Applications

The Chemical Coaters Association International (CCAI) is now accepting applications for the 2019 Matt Heurtz Scholarship Program. CCAI has awarded tens of thousands of scholarship dollars over the past several years to students who are currently enrolled in programs that could lead to a career in the finishing industry. The primary objective of this program is to encourage students to pursue advanced education in finishing technologies. Awards will be announced in June at CCAI's 2019 Annual Meeting in Hilton Head Island, SC.

Education is the foundation of CCAI's mission. The scholarship program attracts new talent to the industrial finishing and surface coating

technologies industry and is sustained by the National CCAI and donations from CCAI Chapters.

"CCAI is actively investing in our industry's future," says CCAI Executive Director, Anne Goyer. "The outstanding group of students who have received CCAI scholarships over the past several years have found employment in the finishing industry. We're committed to supporting students and leading them to a career in finishing."

The competition is open to Canadians. The deadline is March 29, 2019. www.ccaiweb.com

enhanced electrical characteristics. For example, the production of copper-clad laminate (CCL), a material used in printed circuit boards for 5G applications with high-frequency bands, requires materials that exhibit low transmission losses. When used in printed circuit boards, Fluon+ EA-2000 can reduce transmission losses at 28 GHz more than 30 per cent compared to existing materials.

Because of the low transmission losses of Fluon+ EA-2000, it can be applied in both flexible and rigid CCL for use in a wide variety of printed circuit boards, including those for smartphones and other mobile devices, base stations, servers and automotive equipment. This resin features a built-in functional adhesive group that enables one-step processing with other polymers and metals. It also eliminates the need for surface treatment or a separate adhesive layer.

It is heat-resistant to 260 C and features superior chemical resistance, equivalent to conventional PFA materials. It also exhibits excellent non-stick properties, low frictional properties,

water and oil repellency, a low dielectric constant and low dissipation factor. www.agchem.com

New Global Association Created for Photoinitiator Industry

Key industry stakeholders, including BCH, IGM, Miwon and RAHN, have formed the Photoinitiators Platform – the PIP – a global industry association dedicated to serving the common interests of manufacturers, suppliers, formulators, and end-users of photoinitiators.

The association will represent the industry in discussions with governments, agencies and other stakeholders in the framework of regulation and policy-making affecting photoinitiators worldwide.

The association will carry out or commission scientific research, though the initial focus will be to develop and strengthen a network and form relations primarily with institutions, regulatory agencies and other strategic partners and stakeholders worldwide, as well as support the safe use of UV curing in general, and of

photoinitiators in particular.

PIP will communicate and exchange information with the broader UV curing community and with customers and brand owners.

The association is actively expanding its membership base and is open to all stakeholders in the supply chain. Michael Kiehnel of BCH, located in Germany, was elected as Chair, and Stephen Postle of IGM, based in the U.S., as Vice-Chair. www.photoinitiators-platform.org

RPM Acquires Leading Specialty Mold Solutions Brand

RPM International, owner of companies in specialty coatings, sealants, building materials and related services, says its Rust-Oleum group has acquired Siamons International Inc., provider of the Concrobium brand of non-toxic specialty mold cleaners. Based in Ontario, Siamons has annual net sales of approximately \$20 million. Terms of the transaction were not disclosed.

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The Concrobium brand offers a wide range of non-toxic specialty mold cleaning solutions that can be used on both porous and non-porous surfaces, including wood, fabrics and drywall. It is sold primarily in big box retailers, such as The Home Depot, Lowe's and Menards.

As part of this acquisition, Rust-Oleum will strengthen Concrobium's retail presence, introduce it to new market categories, and leverage its customer base to accelerate distribution of other

specialty cleaning brands in Canada. In addition, Rust-Oleum will expand Concrobium on an international scale.

"The Concrobium brand is an excellent strategic fit that will expand Rust-Oleum's specialty cleaning product portfolio, complementing its existing Krud Kutter, Mean Green, Roto-Rooter, Whink, Jomax and Moldex brands and resulting in significant cost synergies and enhanced supply chain efficiencies," says Frank

C. Sullivan, Chairman and CEO of RPM. "The addition of Concrobium will greatly enhance Rust-Oleum's ability to offer a one-stop shopping solution to its retail partners, ultimately making it a leader in the specialty cleaning market."

www.rpminc.com

CPCA Prepares for WTO Showdown Over Controversial EU Classification for Titanium Dioxide

The European Committee for Risk Assessment (RAC) has notified the World Trade Organization (WTO) of its intention to proceed with a number of regulatory actions including the proposal to classify titanium dioxide (TiO₂) as a Category 2 Carcinogen under the EU's Classification, Labelling and Packaging (CLP) Regulation. If allowed to proceed, this regulation could cause significant global trade disruptions impacting Canadian industries, including paint and coatings.

The Canadian Paint and Coatings Association (CPCA) has been engaged on this issue through its membership in the International Paint and Print Ink Council (IPPIC) and its member associations in Europe. The WTO notification allows for non-European countries to engage on the issue as it is a Technical Barrier to Trade (TBT). CPCA is now engaging with Canadian trade authorities regarding what it says are the significant and unwarranted socio-economic and trade impacts that would result from the proposed classification, without providing benefits for the protection of human health.

"To date, the European process has been flawed and has not considered over 50 years of scientific evidence proving that titanium dioxide is a safe and crucial ingredient in paint and coatings products," says CPCA President and CEO Gary LeRoux. "The global industry remains hopeful that Europe will resolve the issue when it comes before the WTO."

The Canadian paint and coatings industry has always taken its responsibility for health, safety and the environment as its highest priority and has ensured that products meet the highest health and safety standards, CPCA says.

TiO₂ is an inert inorganic compound that is used as a white pigment in many industrial applications. These applications include the manufacture of paints, coatings, printing inks and wallcoverings where titanium dioxide plays a critical role in providing essential product properties: whiteness, covering power, brightness, stability and durability of color that cannot be

PPG Provides NHL with Thermochromic Puck Coatings for 2019 Bridgestone NHL Winter Classic



PPG and the National Hockey League have produced official game pucks featuring thermochromic coatings from PPG that were in play at the 2019 Bridgestone NHL Winter Classic at Notre Dame Stadium in South Bend, IN, on New Year's Day.

The coatings change from purple to clear when a puck's temperature is above freezing, providing a visual indication to officials that the puck should be replaced. The coated pucks will be tested at NHL tentpole events during the 2018-19 season and will be further evaluated for broader use in the future.

"Hockey pucks are made of vulcanized rubber and glide smoother and faster when frozen," says Dan Craig, NHL Vice-President of Facilities Operations. "Freezing a puck eliminates bouncing, and game officials closely monitor the puck for temperature changes that affect performance while in play. A coating that changes color when the puck is above freezing will more accurately alert the officials that it is time for a replacement."

Thermochromic coatings supplied by PPG meet the NHL's requirements for withstanding game-environment impacts and low temperatures without impacting adhesion. The coating is dispersed into an ink system and screen printed directly onto an official NHL game puck.

"Working closely with our technology partners, LCR Hallcrest and QCR Solutions Corp., we've been able to offer a smart and elegant solution to a problem that can significantly impact game play," says Alicia Cafardi, PPG Senior Marketing Communications Manager, Industrial Coatings. "The custom dye pigment that changes color with temperature was developed specifically for this application on hockey pucks, but the solution represents an opportunity for other applications where an easy, visual reference could serve to improve the performance or use of an object."

PPG is the Official Paint of the NHL. In addition, PPG coatings help to reduce chips and wear on hockey equipment, including goal posts.

www.ppg.com



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achieved with other raw materials. Titanium dioxide is also used in many other consumer products.

The powder form of titanium dioxide presents zero risk to consumers when incorporated in a finished product such as paint. Consumers and professionals using paint or ink products cannot be exposed to the powder form of TiO₂, once it is embedded in a paint or printing ink. It is safe for consumers.

During the manufacturing process exposure to TiO₂ powder might occur; however national level regulations exist around dust exposure and protection of workers. CPCA says studies over 50 years, covering 24,000 workers, have not found any correlation between workers exposed to titanium dioxide whatsoever. In addition, the five tests on rats cited by the European Chemicals Agency (ECHA) used unrealistically high amounts of titanium dioxide that would not be allowed in a manufacturing environment. This is in contrast to more than 2,000 tests conducted over many years on the same subject with the opposite conclusion. Based on this, CPCA and IPPIC members consider the use of titanium dioxide in paints, coatings, printing inks and wallcoverings to be safe for workers during the manufacturing process.

This is further supported by the ongoing commitment of companies to take every precaution to ensure the safety of their products and workers throughout their supply chain. TiO₂ was scheduled for evaluation under Europe's Reach Regulation in 2017, which is designed to recommend the most appropriate regulatory measures for a substance based on whether it poses a risk to the environment or human health.

www.canpaint.com

PPG to Acquire Global Coatings Manufacturer Whitford Worldwide

PPG has reached a definitive agreement to acquire Whitford Worldwide Company, a global manufacturer that specializes in low-friction and nonstick coatings for industrial applications and consumer products. The transaction is expected to close in the first quarter 2019. Financial terms were not disclosed.

Whitford, a privately held company headquartered in Elverson, PA, was founded in 1969. The company specializes in low-friction, wear-resistant coatings for industrial applications in automotive, aerospace, energy and construction products. Whitford also makes nonstick coatings

Agenda Set for Powder Coating 2019 Technical Conference



PCI's Powder Coating 2019 Technical Conference & Tabletop Exhibition, being held in Orlando, FL, from April 1 – 4 has its technical program set. The four-day event will offer a combination of training, keynote presentations, roundtable discussion, expert panels, and social activities for everyone in the powder coating industry.

The event officially begins with the popular Powder Coating 101: Basic Essentials Workshop and PCI's Custom Coater Forum. The Powder Coating Technical Conference and Exhibition will follow on April 3 and 4. A tabletop display area will feature powder coating manufacturers, powder coating application equipment companies, systems houses, chemical suppliers, and various services that support the powder coating industry.

The technical conference program opens with a presentation from Dr. Amber Selking, Lippert Component Inc.'s Director of People Performance. She will deliver a presentation entitled, "From Surviving to Thriving: Changing Your Corporate Culture," which addresses finding and keeping skilled staff.

The technical conference also features Al Bohlen, President of Mazak Optonics Corp. Bohlen will present "Adhesion Advancements in Laser Cutting That Improve Powder Coating Performance." Lowering costs and becoming more efficient is critical to every powder coating operation and sometimes those savings and efficiencies come from sources often not even considered. Bohlen will discuss the ongoing advancements of laser cutting techniques specifically designed for paint adhesion improvement.

As the fabrication industry has embraced powder coating, the challenges of removing oxidation, and the methods utilised, have been wide ranging. In this discussion, Bohlen will also detail how new methods of laser cutting may eliminate the requirement of some secondary operations when powder coating, such as the use of abrasives, or aggressive wash stages, while lowering overall costs per part.

Attendees can also choose from a wide range of concurrent breakout sessions as well as attend the Tabletop Exhibition and Reception.

<https://conference.powdercoating.org>

for cookware, bakeware and small electric appliances such as toaster ovens, griddles, fry pans and irons. It employs more than 700 people and operates 10 manufacturing facilities located in Elverson, PA; Fostoria, OH; Guelph, ON; Runcorn, UK; Brescia, Italy; Sao Paulo, Brazil; Jiangmen, China; Zhuhai, China; Tuas, Singapore; and Bangalore, India.

"Joining PPG is a giant step forward for Whitford," says Dave Willis, Whitford's founder and Chairman of the Board. "In one fell swoop,

we will have access to new technologies, diverse R&D facilities, strong financial support and global coverage in areas where we have wanted to expand, but did not yet have sufficient resources. This is very good news for our customers and our employees."

"Whitford's leadership in low-friction and nonstick coatings will provide strategic additions to the robust portfolio of industrial coatings solutions we deliver today, while PPG's research and development organization will leverage

Daemar manages the sourcing and delivery of millions of essential components including the complete line of Caplugs masking and protective products to Canadian manufacturing and finishing industries. Our Caplugs inventory includes more than 12,000 lines of standard parts - featuring caps and plugs developed specifically for masking applications and available in materials including: silicone, EPDM, Flex 500 and vinyl. Our tapes and standard die-cut discs are available in polyester, polyimide, glasscloth, crepe, aluminum and more.

Do you require a unique shape, size, color, material or processing requirement? Daemar's technical team along with Caplugs' in-house design engineers can develop custom moulded parts, custom die-cuts and custom kits for specific applications.

For more than 40 years, Daemar has provided solutions for industry applications from high volume production lines requiring design assistance and supply chain management, down to a simple one-off application requiring a single cap. Daemar's regional warehouse network with stocking facilities in Toronto, Montreal and Edmonton provides fast and efficient delivery of parts to customers throughout the country.

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Whitford's extensive expertise in fluoropolymer chemistry across the markets we serve," says Tim Knavish, PPG Senior Vice-President, Industrial Coatings.
www.ppg.com

Pantone Announces the Color of the Year 2019: Living Coral



Pantone, which provides professional color standards and digital solutions for the design industry, has announced PANTONE 16-1546 Living Coral as the Pantone Color of the Year 2019. It describes this as "an animating and life-affirming shade of orange with a golden undertone."

Pantone says in reaction to the onslaught of digital technology and social media increasingly embedding itself into daily life, people are seeking authentic and immersive experiences that enable connection and intimacy. Sociable and spirited, the engaging nature of PANTONE 16-1546 Living Coral welcomes and encourages lighthearted activity. Symbolising the innate need for optimism and joyful pursuits, PANTONE 16-1546 Living Coral embodies the desire for playful expression.

Pantone adds that the color emits the desired, familiar and energizing aspects of color found in nature.

"Color enhances and influences the way we experience life," says Laurie Pressman, Vice-President of the Pantone Color Institute. "As a shade that affirms life through a dual role of energizing and nourishing, PANTONE 16-1546 Living Coral reinforces how colors can embody our collective experience and reflect what is taking place in our global culture at a moment in time."
www.pantone.com

AkzoNobel Specialty Chemicals Rebrands as Nouryon

AkzoNobel Specialty Chemicals is being rebranded as Nouryon. The move follows the recent acquisition of the business by The Carlyle Group and GIC, and marks the company's transition to becoming an independent, global specialty chemicals leader.

"We are starting from a great position," says new CEO Charles W. Shaver. "We have a great set of businesses, leadership positions across our portfolio, long-term customer partnerships, and a dedication to continuous improvement and innovation we can leverage for further success. As an independent company we can accelerate our progress on all fronts and take our rightful place alongside other industry leaders."

Nouryon has a history that goes back nearly 400 years and its new name and brand identity reflect that heritage, the company says. Nouryon & Van der Lande was one of the first companies to realise the important role chemistry could play in everyday life, the company says, while today, Nouryon is a world leader in essential chemistries used to manufacture everyday products.

"When we started developing our new name and brand we asked our employees what mattered most to them," says Vivi Hollert, Chief Communications Officer at Nouryon. "Our employees are especially proud of our heritage, as well our track record of growing through partnerships, innovation, sustainability, and contributing to society. We combined all of this to create a brand identity for Nouryon which is true to who we are and helps us stand out from our competitors."

Nouryon says its new company purpose, "Your partner in essential chemistry for a sustainable future", reflects this pride as well as the focus going forward. As such, Nouryon will be working closely with customers and other partners to innovate, make strategic investments, and develop essential, sustainable solutions that meet customer needs and fuel shared growth.
www.nouryon.com

New Industrial Coating Could Alleviate Water Wastage in Solar Energy Production

Opus Materials Technologies, developers of industrial coatings, together with a consortium of academics and scientists, wants to transform solar energy generation through the development of a dirt-repellent coating for industrial-scale photo-

voltic (PV) panels. Trials conducted to date have demonstrated that the technology at the heart of the coating, Solar Sharc, could dramatically reduce and even eliminate water usage, making solar power a truly sustainable energy source. Opus has secured close to £4-million in UK and EU funding to develop, validate and test Solar Sharc.

Although solar power should be one of the eco-friendliest energy sources, the company says it is tainted by the vast amounts of water consumed during routine operational and maintenance processes. Solar modules must be cleaned regularly to prevent dirt and dust from accumulating to optimize their performance.

The majority of large-scale solar plants are situated in hot/dry countries and the millions of litres of water needed to clean the individual panels is draining natural reserves, leaving inhabitants with highly depleted water sources. Solar energy installations in India for example, consume in excess of 2.7-billion litres of water annually, while in paradox, only 16 per cent of its population has access to running water.

The nanotechnology underpinning Solar Sharc creates an uneven, lotus leaf-style surface that dynamically repels external pollutants such as dust, dirt or animal waste, therefore preventing dirt build-ups from occurring in the first place.

Additionally, the manufacturing process is based on a "materials by design" approach, which means its chemical composition can be fine-tuned according to geographical location or climatic conditions. This would be a key factor from an operational and ecological perspective because it would help ensure that industrial-size installations are both economically viable and sustainable in the longer-term.

"Excessive water consumption is the unspoken side effect of the solar energy industry," says Darren Higham, Marketing Director at Opus Materials Technologies. "For solar energy production to be efficient and hold its own against other energy sources, solar modules must be cleaned regularly and the environmental repercussions can be dramatic. Solar Sharc could be a real game changer because lengthy cleaning processes would potentially be eliminated, preserving water resources in the world's driest regions."

Solar Sharc has already been tested in real world installations in Europe and the Middle East.

<https://solarsharc.com>

DeFelsko Corporation, a leading U.S. manufacturer of inspection instruments, offers a variety of instruments to meet the coating industry's needs.

New additions to the PosiTector and PosiTest line of inspection instruments include:

Uncured Powder Thickness Gage

NEW Products include the redesigned PosiTest® PC Powder Checker. The PosiTest PC Powder Checker measures uncured powder coatings using non-contact ultrasound technology to predict a cured thickness ensuring adequate coverage and reducing waste. The instrument has been completely redesigned as a dedicated standalone unit - no PosiTector gage body required. With a measurement speed up to four times faster than previous models, the new PosiTest PC is easier to use, especially on moving parts and challenging geometries.

Barcol Hardness Impressor

The new PosiTector BHI Barcol Hardness Impressor is DeFelsko's latest addition to the PosiTector line of interchangeable probes. It is ideal for measuring the indentation hardness of soft metals (aluminum, aluminum alloys, copper, brass, etc.), harder plastics and fiber-reinforced plastics.

The durable PosiTector BHI has a number of advantages over the conventional analog (934-1 Barcol Hardness Tester) and other competitive offerings - including the ability to save readings into memory and easy reporting options via the PosiSoft suite of software as well as DeFelsko's notable two-year warranty on gage body and probe.

The American-made impressor also features a durable field replaceable indenter and aluminum alloy test disks with leveling plate to verify gage accuracy. Conforms to ASTM B648/D2583, DIN EN 59 and AS/NZS 3572.22.

Low Voltage Pinhole Detector

The PosiTest LPD uses a wet sponge to detect holidays, pinholes, discontinuities and other coating flaws on metal and concrete substrates without damaging the coating. Supplied in a rugged inspection case, the lightweight, ergonomic PosiTest LPD includes everything needed for testing. Features include four regulated voltage output options and GroundSense™ to visibly reassure the user that the instrument is properly grounded. Select from two kit options: the PosiTest LPD Basic kit includes everything needed for detecting pinholes using a rectangular sponge wand; the PosiTest LPD Complete Kit includes the Basic Kit and adaptable sponge hardware including rectangle (flat), roller, ID and custom sponges in a hard shell case.

Call DeFelsko at (800) 448-3835 or visit our website at www.defelsko.com to get assistance selecting the optimal instrument for your application.

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Axalta Opens World's Largest Coatings and Color R&D Center

Axalta recently celebrated the official opening of its Global Innovation Center, which it says is the largest coatings research and development (R&D) centre in the world, with a ribbon cutting ceremony. The 175,000-sq.-ft. Global Innovation Center offers specialty labs, as well as office space. Its location in Philadelphia's historic Navy Yard enables collaboration among Axalta employees, business partners and customers throughout the Philadelphia area and beyond.

"Axalta's Global Innovation Center will become the central hub for our global research, product development, and technology initiatives where we develop and deliver the most innovative coatings products in the world," says Robert Bryant, Interim CEO, Axalta. "Whether in color technology, polymer and formulation chemistry, or application knowledge, the world-class capabilities and talent at Axalta's Global Innovation Center will fuel new products and deliver the solutions that our customers

want to grow their businesses into the future."

Axalta says the location offers an attractive workplace for new talent, and the campus was built with researchers in mind, modeling an academic setting with a variety of indoor and outdoor spaces to foster teamwork and creativity.

"Axalta's team of scientists and technicians at the Global Innovation Center will develop next generation coatings products and keep pace with emerging application needs," says Barry Snyder, Chief Technology Officer. "Regulations and customer demands call for newer technologically advanced coatings. The increasing use of lightweight plastic and composite materials in vehicles to save fuel require new coatings formulations. Developing products to suit these and other needs will be the mission of the Global Innovation Center and Axalta's worldwide research and development network."

www.axalta.com

Erie Powder Coatings (EPC) has been offering custom and stock powder coatings and manufacturing powder coatings in Niagara since 1994. Erie has built up a strong customer base on both sides of the border and across North America. The company is very flexible, able to manufacture products from 10,000 kg or more down to a single box. The addition of a U.S. facility near Erie, PA, has added a great advantage for Erie's customers, many of which also have operations on both sides of the border, to purchase from both facilities.

The addition 10 years ago of the U.S. facility has allowed the company great flexibility in dealing with customers. While the Canadian facility acts as a manufacturing base and corporate headquarters, the U.S. facility allows local production of coatings to the U.S. market, as well as warehousing and sales functions.

Erie offers a strong line of custom manufactured products, built to customers' specifications. The company offers a unique ability to offer small volume custom-built orders, while still being competitive on larger volumes, and also offering advanced chemistries and coatings.

EPC has had a strong offering in some very specialized markets, such as anti-corrosion coatings, anti-graffiti coatings, and SEFA (Scientific Equipment and Furniture Association) grade coatings.

EPC found that the standard zinc rich corrosion primers on the market had a big problem in application - real problems with inter-coat adhesion which can lead to disaster for users of this type of product. Erie has fixed this problem and made this type of powder far easier to use successfully. Erie is currently marketing two zinc primers for this type of application.

Several anti-graffiti (AG) chemistries are available, but the newest and most popular product is the hybrid anti-graffiti product. This product is substantially different from others on the market. Other AG products are expensive, difficult and often contain a number of hazardous ingredients. Erie's hybrid AG products have the distinct advantage of being fast cure but oven stable, and free of TGIC and isocyanate, which are often used in these products.

SEFA sets standards for laboratory furniture and cabinets. Erie has been active in this market and has qualified powders that meet or exceed these specifications. While this is a select and niche market, Erie has found this market to be a strong one.

Fast cure product lines are also a specialty that Erie excels in. One of the primary reasons for this is the type of

equipment that Erie uses - specialty Swiss-made plastics extruders that are better at producing low-cure temperature coatings than other types of extruders.

Erie Powder Coatings is proud to be ISO 9001:2015 compliant.

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Gema Wins Besser Lackieren Supplier Award 2019

Gema has been awarded the BESSER LACKIEREN Supplier Award 2019 for Powder Application Equipment. The award is based on a survey conducted by the IMK Institut für angewandte Marketing- und Kommunikationsforschung GmbH on behalf of BESSER LACKIEREN magazine.

Survey participants were owners/managing directors and paint shop managers of Gema customers based in Switzerland, Germany and Austria.

Survey participants assessed their suppliers on the basis of seven criteria:

- Product quality
- Price-performance ratio
- Delivery performance
- Support during installation and commissioning
- Partnership strength
- Understanding of current and future market requirements
- Innovation competence

Gema achieved positive scores particularly in Product Quality, Delivery Performance and Support during installation and commissioning.

“Gema’s strategy is largely focused on innovation, quality and customer service, therefore we are particularly proud of this award that is entirely based on customers’ satisfaction indicators. It is an important recognition for our past performance and a great incentive for all our team to continue growing our business with dedication and enthusiasm,” says Claudio Merengo, Gema’s President Worldwide.

www.gemapowdercoating.com

NRC Opens New Manufacturing and Automotive Innovation Hub



The NRC Manufacturing and Automotive Innovation Hub is a new open-space concept laboratory intended to be a collaborative workspace. The 75,000 sq-ft hub is a one-of-a-kind research station where all levels of the automotive and manufacturing supply chain can collaborate on-site with NRC specialists and Canada’s research ecosystem.

Two new labs with offices, along with dedicated NRC research, design and development staff, are available to manufacturers, integrators and equipment makers. In the digital factory, collaborators can visualize and develop advanced manufacturing processes. In the automotive lab, they can integrate and develop technologies related to connected/autonomous vehicles, vehicle light-

weighting and alternative propulsion/electrification. Through this facility, NRC will provide technical solutions and apply them directly to collaborators’ products and processes.

The Hub, located in London, ON, is part of the NRC’s Automotive and Surface Transportation Research Centre. Customers will work shoulder to shoulder with NRC specialists in automotive technology, and can expect a broad knowledge base that includes surface engineering laser- and cutting-based microfabrication; applications for the deposition of specific coatings; and value-adding functionalities for advanced tooling and surface texturing, among many more.

The Hub offers four laboratories for flexible and confidential work as well as two vehicle bays, complete with lifts and related automotive shop capabilities. Work cells include advanced automation, laser manufacturing and advanced machining to be used for scale-up and on-site digital factory. Capabilities include:

- Additive manufacturing of metal parts through laser powder bed fusion, laser cladding and laser powder deposition
- Micromachining, laser fabrication, laser polishing, texturing and welding
- Specialty coatings and surface functionalisation.

www.nrc-cnrc.gc.ca

Industry Applauds Investment from Government

The Chemistry Industry Association of Canada (CIAC) and the Canadian Paint and Coatings Association (CPCA) have both welcomed measures that the federal government says in its Fall Economic Statement will ensure Canada is a competitive environment for industry investment.

“These measures, complemented by those recently announced in Ontario and Alberta’s enhancements to the Petrochemicals Diversification Program and Petrochemical Feedstock Infrastructure Program, help make the case that Canada is, once again, providing a competitive business environment and is open to investments in the chemistry sector,” says Bob Masterson, President and CEO of CIAC. “With over \$20 billion in new investment opportunities currently under consideration in our sector, measures such as these will help turn those prospects into reality.”

Gary LeRoux, President and CEO, CPCA, added, “The biggest issue for our members is the need to have less regulatory burden and greater alignment with the United States where more than 50 per cent of coatings products sold in Canada are now shipped from. Government should move quickly to stem the flow of manufacturing to the United States and recommit to

The Global Leader in Powder Coating Technology

Gema is a pioneer in powder coating equipment technology, offering customers the confidence and expertise that comes with being the industry's global leader. Equipment from Gema is durable, flexible and engineered to last, providing increased performance, greater efficiency, and a better return on investment. Gema sets the industry standard, developing the finest powder coating equipment available.

Gema is leading the way in color change solutions, offering the latest product innovations designed to maximize productivity and color change flexibility.

Gema's **OptiFlex® Automatic and Manual powder coating guns** integrate the most advanced powder charging technology available. Every component is designed for total reliability, convenience, and performance. Using 100,000 volts of **FirstPass Power™**, you can coat it right the first time - every time!

Gema's **Magic Series® quick color change booths** are designed to handle a large variety of colors and guarantees extremely quick and clean color changes. All of this without any mechanical cleaning tools or entering the booth!

The **OptiCenter™**, with its quick and dust-free powder management, enables excellent coating results. Short suction tubes, new injectors, and optimized pneumatic connections ensure a higher powder flow rate with less air consumption, resulting in reduced wear and tear. The overall design allows extremely quick color change.

Gema's **OptiColor™** performs color changes in a matter of seconds, while managing multiple colors at one time and eliminating the risk of contamination. This easy to use and cost effective solution allows you to save time and money when changing from one color to another. OptiColor is designed for manual spray operations using multiple hoppers set up to spray various colors.

Gema's product offerings include manual & automatic spray guns and booths, fast color change equipment, cartridge and cyclone recovery systems, gun movers, control systems and other ancillary equipment.

The Gema North America office offers direct sales and distribution support in Canada, the United States and Mexico. To learn more about product offerings or obtain assistance in determining which equipment is best for your operation, visit www.gemapowdercoating.com, email Powdersales@gema.us.com or call 800-628-0601.



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stabilising and growing the manufacturing base here in Canada. The lowering of the effective corporate tax rate will also help in that regard.”

CIAC says Canada has world-class, low carbon resources to support chemistry manufacturing. Historically, Canada has attracted approximately 10 per cent of the total chemistry investments made in North America, but recently this share has plummeted to two per cent. The association is pleased to see that an additional \$800-million in funding has been allocated to the Strategic Investment Fund which has been valuable in attracting chemistry investment to Canada. The recommitment to National Trade Corridors Fund is also important to ensure market access for the anticipated increased production in the chemistry sector.

www.canpaint.com

www.canadianchemistry.ca

Estron Chemical Opens New Innovation and Technical Center

Estron Chemical, a global supplier of polymeric resins and additives, has opened the Dr. Stanley B. and Ingrid I. Skora Center for Innovation and Technology. The company says the cutting-edge facility will accommodate its research and application activities, including product development, synthesis and analytical testing, and will enable it to better collaborate with its customers and business partners, as well as take advantage of new opportunities. The centre is located at the company's global headquarters in Calvert City, KY.

Designed by Hastings Architects, the Center for Innovation and Technology incorporates, Estron says, novel coating technologies and sophisticated design features, and firmly entrenches Estron's roots in western Kentucky. Construction and funding of the project was made possible by grants from the state.

www.estrn.com

Evonik Appoints EMCO-Inortech as Distribution Partner for Polyurethane CASE Market in Canada

Evonik Corp. has recently appointed Canadian chemical distributor, EMCO-Inortech ULC, as its national distributor for the polyurethane Coatings, Adhesives and Sealants and Elastomers (CASE) market in Canada. Based in Terrebonne, QC, with regional public warehousing throughout Canada, EMCO-Inortech is dedicated to the CASE market. Both companies say this new partnership will give Canadian formulators access to

the highest level of products and services.

“Polyurethane is a versatile material ideally suited for a wide range of CASE applications and with EMCO-Inortech's knowledge of the local CASE markets, we hope to further develop our Canadian business,” says Peter Hohl, Vice-President Americas, Comfort & Insulation, Evonik. “By developing better distribution channels we are well positioned to meet the current and future needs of the polyurethane CASE market.”

Jean-Baptiste Moranta, Vice-President of Sales, Marketing & Operations for EMCO-Inortech ULC, says, “We are proud to welcome Evonik Comfort & Insulation's polyurethane catalysts into our product offerings. It will complete our extensive portfolio and will help to ensure growth and future innovation in the Canadian market. EMCO-Inortech laboratory and dedicated technical sales force will work together to implement Evonik catalysts throughout Canada, and be part of the next generation of polyurethane applications, which supports our legacy commitment ‘Beyond Chemistry.’”

www.evonik.com

AkzoNobel Showcases 2019 Color and Styling Trends for Wood Coatings

AkzoNobel recently released its color and styling trends for furniture, cabinetry, flooring, and building products. Spiced Honey is the 2019 AkzoNobel Color of the Year. Robert Haley, Color Trends Manager for AkzoNobel's wood coatings business, says two top trends are centred on customisation in design and the influence urban housing is having on the home furnishings industry.

“We are seeing a strong desire for customisation in design, and research is revealing consumers expressing their individual styles – for example, through reclaimed flooring used on statement walls and repurposed vintage pieces in homes,” says Haley. “Collaborative spaces are also becoming more important as populations in urban areas continue to expand, leading to more residents living in large collaborative environments that are more cost-effective than individual houses or apartments.”

There are, he adds, four wood finishing trends for 2019 that transcend design:

- Dichotomy – the importance of two tones, multiple layers and contrasting styles in a space
- Authentic – organic forms that include

weathered, wire-brushed finishes where imperfection is admired

- Luminous – pearl and metallic finishes on luxurious looks that include velvet touches
- Retro-Classic – modern influences with a traditional soul

Bob Averett, Color Design Manager, says, “Our job is to inspire our customers with translations of these trends into unique wood finishes and to ensure that they are capable of running these designs in their factories across the world. We help designers reflect and accent the Color of the Year, Spiced Honey, by offering interpretations based on contrasting tonal palettes to deliver an on-trend room aesthetic.”

www.akzonobel.com

People

Robert Bryant Named Chief Executive Officer Of Axalta



Robert Bryant

Axalta Coating Systems Ltd. has named Robert Bryant Chief Executive Officer on a permanent basis, effective immediately. He had been serving as interim CEO since October 2018. Bryant was also appointed to serve on Axalta's board of directors.

Charlie Shaver, Axalta's Chairman of the Board, says, “Over the past two months, Robert has seamlessly stepped into the role of interim CEO and led the company in a challenging market environment. Having worked closely with him over the past six years, I am extremely confident in his ability to lead Axalta effectively as our permanent CEO. The board and I look forward to seeing Axalta build on its success and

MOCAP is a leading manufacturer of standard and custom, plastic and rubber injection-molded, dip-molded and extruded products. We offer a full line of caps, plugs, grips and tapes for product protection, masking and finishing purposes, sold to virtually every industry for countless applications.

In business since 1982, MOCAP's philosophy has always focused on finding the right solution for our customers whether through our standard or custom products. We serve our customers' requirements globally, with locations in North America, Europe and China.

We currently offer a full line of masking products in various materials designed to meet the requirements of nearly any coating/finishing application. Materials range from one-time use high temperature vinyl to ultra high-temp reusable silicone rubber, while our extensive product line includes standard cap and plug configurations, as well as pull plugs, washer plugs, tapes, discs and tubing. The products can be used for your high temperature painting, plating, anodizing and coating operations, and in some cases, like EPDM and silicone products, can be used repeatedly for optimum savings.

Some of our Masking Products include:
High Temperature Vinyl Caps and Plugs – Designed for one-time use, our caps and plugs are available in various sizes and styles to meet your requirements. The high-temp vinyl will withstand approximately 450 F for 30 minutes.

EPDM Caps and Plugs – Designed for repeated use, our line of EPDM caps and plugs are perfect for temperatures up to 475 F and are a more economical solution than silicone. They also offer better chemical resistance.

Rubber Caps and Plugs – The ultimate in masking materials, silicone rubber offers ultra-high temperature resistance, up to 600 F, and reusability, all in one.

Polyester/Polyimide Tapes and Discs – We offer both materials in both styles for masking of flat surfaces. Polyester material will resist up to 425 F for up to one hour, while the polyimide material will resist over 500 F for up to one hour. These tapes and discs can be removed easily and will not leave behind any residue.

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Silicone Rubber Tape – Our self-fusing tape will conform to any standard or irregular shape and works excellently as a custom mask. The tape will stretch up to 300 percent and has no adhesive, so it is safe for temperatures above 500 F.

Silicone Tubing – The silicone tubing is sold in coils and works with any high temperature environment. It resists temperatures up to 500 F and can be cut easily at your facility to the length required for your application.

Contact Information: Please visit our website at www.mocap.com or do not hesitate to contact our sales staff for free samples, pricing, or to learn more about our products/processes. Email us at sales@mocap.com or call us at 1-800-633-6775.

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continue to thrive under Robert's leadership."

Bryant says, "I appreciate the Board's confidence in me and am honored to continue working alongside a talented management team and dedicated employees to build on Axalta's well-deserved reputation for customer service and innovation."

The company also announced Sean Lannon has been named Chief Financial Officer on a permanent basis, effective immediately. He had been serving as Vice-President and interim Chief Financial Officer since October 2018.

Bryant concluded, "Sean's business and financial acumen, years of experience working in increasingly senior finance roles at Axalta, and extensive background in financial reporting make him a great fit to succeed me as Axalta's CFO. I am very excited to continue working with Sean to grow Axalta and build shareholder value over the long term."

www.axalta.com

Benjamin Moore Appoints Dan Calkins Chairman & CEO

Dan Calkins, currently President and Chief Operating Officer of Benjamin Moore & Co., has been named chairman and chief executive officer, effective immediately. Calkins now reports to Berkshire Hathaway Vice-Chairman Greg Abel and succeeds Mike Searles, who has retired after five years at the helm.

Calkins began his career with the company in 1987 as a sales trainee. Throughout his 32-year tenure with Benjamin Moore & Co., Calkins has held a series of progressively influential and responsible positions, and brings significant leadership, sales and industry expertise to his new



Dan Calkins

post. In recent years, he served as President of Global Sales, where he influenced growth and an ambitious strategy for expanding distribution through independent channels.

"Benjamin Moore & Co. has long established itself as an industry leader, and under Dan Calkins' guidance, we believe they are primed for an accelerated trajectory into the future," says Greg Abel, Berkshire Hathaway Vice-Chairman. "Dan embodies the Benjamin Moore core values and both his proven track record and strong business acumen give us incredible confidence for the company's future success."

www.benjaminmoore.com

Wade Hickam Joins Col-Met

Wade Hickam has joined Col-Met Engineered Finishing Solutions as a co-owner. He will work to improve distributor partner relationships, develop and implement new Col-Met products, implement marketing programs, improve operational efficiency, and spearhead other strategic growth initiatives, says Eric Jones, founder and CEO.

Hickam has more than 30 years' experience managing and growing finishing-related businesses. He spent 17 years at ITW Finishing, now Carlisle Fluid Technologies, as GM of several business units, before leaving the corporation in 2003 to own and manage C&C Industrial Sales (CCIS). After growing the CCIS business into one of the largest finishing distributors in North America, he sold it to OTP Industrial Solutions at the end of 2016.

Col-Met has been supplying various finishing systems components such as paint booths, powder booths, ovens, washers, and AMUs since 1997.

www.colmetsb.com

Walter Surface Technologies Names New CEO, VP

Walter Surface Technologies announced two senior level appointments, naming Marc-André Aubé to Chief Executive Officer and David Wright to Vice-President Corporate Development.

Following the recent acquisition of Walter Surface Technologies from ONCAP, in partnership with the existing management team, Aubé moved to the CEO position from his previous role of President and COO. He joined Walter in February of 2017.

Aubé is a trained engineer with an MBA and a CFA designation. He has experience in various sectors, such as chemical products (Nalco

New Associate Publisher Joins CFCM



Canadian Finishing & Coatings Manufacturing Magazine (CFCM) is pleased to announce that Gillian Thomas has joined the publication as Associate Publisher and Sales.

Thomas began her advertising sales career in 2000 and has handled advertising sales for a variety of independent and association publications, most recently including one covering wood architecture and structures that has direct relevance to a major segment of CFCM's mandate. She is excited to promote the integrated advertising opportunities CFCM has to offer and looks forward to meeting many of you at upcoming trade shows and industry events.

She holds a Media Studies Diploma from Aberdeen College of Further Education and continues her professional development by attending training and advertising sales courses through Magazines Canada. She can be contacted at gillian.thomas@cfcma.ca

Canada), oil (Petro-Canada) and finance (Caisse de dépôt et placement du Québec and Scotia Capital Inc.).

In addition, David Wright has been promoted to Vice-President of Corporate Development. In this role, Wright will lead strategic initiatives including special projects and acquisition oppor-

Howard Marten Fluid Technologies Inc. is the preferred partner of companies across Canada providing our customers with solutions for their fluid handling, spraying, coating, fluid transfer, and filtering requirements.

Our experienced sales, customer service and engineering teams from our strategically located branches work closely with our customers to address their unique requirements. With branches in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Quebec, Howard Marten Fluid Technologies has grown to become your local Canadian distributor.

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Our branches are authorized service centers for:

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- Nordson Powder, Liquid & Hotmelt Equipment

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To help our customers keep their spray and powder coating systems working properly, Howard Marten Fluid Technologies has developed the Assure family of preventative maintenance programs. Spray-Assure and Powder-Assure maintenance programs can protect your investment and ensure minimal downtime through proper scheduled maintenance and up-to-date equipment information.

Howard Marten Fluid Technologies is much more than a distributor with parts and service capabilities. Our Integrated System Solutions group provides custom engineered systems for our customer's unique coating, spraying, and filtering applications.

Offering innovative solutions for our customer's requirements and continued support for the lifecycle of the products we provide is what has set Howard Marten Fluid Technologies apart from the competition since 1950. Contact your local branch to discuss how we can help you with your unique requirement today.

www.howardmarten.ca

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tunities to deliver on the company's global growth plan. He joined Walter in 2015 as part of the company's Next to Succeed leadership program, after which he held the position of Business Development Manager.

Wright has a B.S. from the United States Merchant Marine Academy and an MBA from the Rotman School of Management, University of Toronto. Prior to joining Walter, he was an Olympic athlete in the sport of sailing, competing in the 2012 Olympic Games in London, UK.

"We are very excited about the opportunity to build on the Walter brand, legacy and business with our customers and partners," Aubé, says. "We will continue to bring to market new product innovations, expand on our technical leadership and enter new market segments. This will enable more fabricators and MRO facilities to increase productivity in their workplace through the deployment of safer, more efficient and more cost-effective metalworking products and solutions."

www.walter.com

Marcy Gainey Joins Radtech

Marcy Gainey PhD, chemist and TSCA expert, has joined RadTech, the association for UV and EB technology. Gainey will help the association respond to regulatory issues and will also be available to all member companies through the EHS Committee.

The announcement was made at the recent RadTech EHS Committee meeting by Chair Michael Gould of Rahn.

www.radtech.org

Graymills Announces Leadership Changes

Kristen Shields takes the reins as President of 80-year-old Graymills, which manufactures ink pumps, metalworking pumps and parts washers. The company is best known for peristaltic or 'tube' pumps, engineered specifically for flexo and gravure printing applications.

Graymills manufactures all of its global products at its 125,000-sq. ft. headquarters and plant in Broadview, IL. The company has been owned by the Shields family since 1980.

Kristen has held a variety of key roles in sales, marketing, and operations since joining the company in 1989. Linda Shields will continue her position as chairwoman.

"I'm thrilled to take over the day-to-day lead-
continued on page 49

Calendar of Industry Events

March 19-20, 2019: BIG IDEAS for UV+EB Technology conference, Redondo Beach, CA, www.radtech.org

April 1-4, 2019: Powder Coating 2019 conference and tabletop exhibition. Renaissance Orlando, Seaworld, Orlando, FL. www.powdercoating.org

April 8-10, 2019: American Coatings Association CoatingsTech Conference, at the Westin Cleveland Downtown Hotel, Cleveland, OH. www.paint.org

May 22-23, 2019: CPCA Annual Conference and AGM, at the Sutton Place Hotel, Vancouver, BC. www.canpaint.com

June 3-5, 2019: Sur/Fin 2019, Rosemont, IL. www.nasfsurfin.com

June 19-20, 2019: Biobased Coatings Europe 2019, Dusseldorf, Germany. www.wplgroup.com/aci/event/biobased-coatings-europe

October 1-3, 2019: AAC Aluminum Anodizers Council Conference, at the Houston Royal Sonesta in Houston, TX. www.anodizing.org

October 2-3, 2019: Canada Woodworking West, at Tradex, Abbotsford, BC. www.canadawoodworkingwest.ca

October 31-November 2, 2019: WMS Woodworking Machinery & Supply Conference and Expo, at the International Centre, Mississauga, ON. www.woodworkingnetwork.com

November 11-14, 2019: Fabtech 2019, in Chicago, IL. www.fabtechexpo.com

November 13, 2019: Canadian Association for Surface Finishing Conference. www.casf.ca



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Buckman Canada was established in 1948 as a sales and distribution company providing industrial microbicides for many applications. Buckman has continued to grow with a market-driven strategy that emphasizes meeting the customer's needs both with innovative products and application technology. This also meets today's demanding regulatory and environmental requirements. We focus on solving customers' problems by listening to their issues and responding with measurable, cost-effective products and services. Our business units include pulp and paper, water treatment, leather and performance chemicals which, among many other industries, also includes paint and coatings.

Fire Retardants

The Flamebloc GS series of fire retardants are clear, water-based, and contain little or no VOC, and are designed to meet industry needs for greener, safer fire-retardant technology. We also market halogen and non-halogen products for smoke reduction and flame prevention. Our increased focus on fire retardants and smoke suppression has resulted in more diverse offerings in our product portfolio.

Coatings and Plastics

Buckman's coatings and plastics program started in 1951 with Busan 11M1, a fungicide used to control mould on painted surfaces. Since that time, our comprehensive product portfolio has grown to include both standard and engineered additives for extra protection of formulated products such as corrosion inhibitors, mould inhibitors, wood preservatives, flash rust inhibitors, UV light stabilizers, dispersants, flocculants, heavy metal precipitants, defoamers and specialty products.

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At Buckman we are serious about sustainability, and we know our customers are too. That's why we believe in sustainability reporting by meticulously measuring how our operations affect others and the planet as a whole. It's why we strive to be transparent about our sustainability goals and our progress toward meeting them.

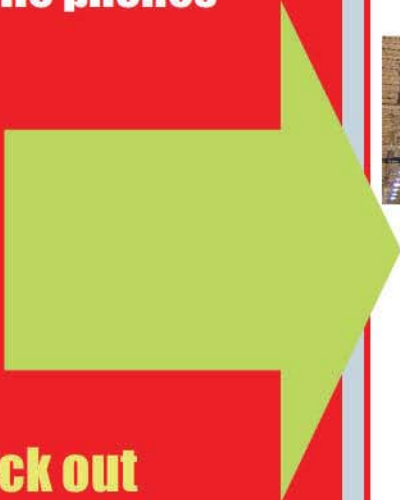
Sustainability is measured in all kinds of ways. In the energy we save and the water we conserve, of course. But also in how we touch others. And in how financially responsible we are as an employer, manufacturer and service provider. So we set goals and assess our progress in six key areas: economics, the environment, labour, human rights, society and product responsibility.

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PAINT & COATINGS NEWS

HUBER BUYS MARTINSEWERK FR MATERIALS
J.M. Huber Corp., through its Huber Engineered Materials division, has acquired the Martinwerk business of Alkermat Corp.
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n-tech **FUTURE BECKONS SMART COATINGS**
Smart coatings, the multi-functional materials, are set to take over various markets and market niches formerly dominated by more conventional coatings materials, says a new report.
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FINISHING NEWS

CCAI OPENS SCHOLARSHIP PROGRAM
The Chemical Coatings Association International is now accepting applications for the 2016 Matt Hevner Scholarship Program.
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ELCOMETER CONSOLIDATES MANUFACTURING IN UK
Eskomex, which supplies coating inspection, physical test equipment and ultrasonic NDT products, has decided to consolidate the Group's European manufacturing and CMC washing operations in Manchester, UK.
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NEW PRODUCTS

BENCHTOP SPECTROPHOTOMETERS
Debecor has released its 800 and 500 spectrophotometers.
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TESLA NANOCOATINGS DEVELOPS WET-ON-WET PROCESS
Tesla NanoCoatings has announced development of a breakthrough wet-on-wet application process for Teflon primer and topcoat, a step it says strengthens the company's position in carbon nanotube corrosion-protection technology.
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PEOPLE

OMNOVA SOLUTIONS NAMES GENERAL MANAGER
Thomas Herle has joined Omnova Solutions Inc. as general manager, specialty coatings & ingredients (SC&I).
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PPG NAMES SLATE OF VICE-PRESIDENTS
PPG Industries is making a group of executive appointments, effective March 1.
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More than words, this motto represents EMCO-Inortech's "raison d'être," always striving to give unique and unparalleled service to our customers and suppliers.

The great experience of EMCO-Inortech's personnel at the customer service, sales, regulatory and technical levels will, without a doubt, enable you to successfully establish new technologies. Our laboratory is always maintained at the cutting-edge of technology and we constantly make sure that the latest equipment is available. In doing so, we ensure outstanding support to our customers and suppliers.

EMCO-Inortech's mission is always to push the limit of the technologies offered by our suppliers and others for innovative and leading-edge solutions.

In order to maintain our technology expertise and the excellent interpersonal skills so well recognized by the market we serve, all EMCO-Inortech's personnel, without exception, are encouraged to go to conferences and seminars, and to follow continuous professional development.

For the last 25 years, EMCO-Inortech has strived to help customers successfully secure new opportunities, supported by its unparalleled technical team. For our suppliers, we ensure outstanding visibility and excellent market penetration.

Being proactive in the markets we serve - coatings, inks, plastics and adhesives - and being especially attentive to our customers' demands and problems, we always make sure that the selected supplier is at the cutting edge of their technology. This approach strengthens and guarantees a long and fruitful partnership with our customers and suppliers.

In this day and age, delivery on short notice and on time is a paramount asset for our customers and suppliers. Our Canadian public warehousing network helps us to make sure that our customers have the material when needed and on time.

EMCO-Inortech's success has always been its outstanding capacity to understand new technologies and to be able to explain them to our customers. This

forces EMCO-Inortech's staff to always adapt, and be on top of the ever-changing market conditions.

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CPCA CORNER

Paint & Coatings Issues in Canada



The Canadian Paint and Coatings Association was established in 1913 to represent the interests of Canada's Paint and coatings industry. CPCA has a strong track-record of protecting its members and their products using evidence-based advocacy and timely member communications. CPCA's monthly Regulatory Radar publication ensures CPCA member companies stay informed on the relevant issues impacting their business, regulatory compliance requirements and mandatory deadlines. Below is a sampling of the issues CPCA member companies received over the past several months.

Comprehensive Canada CoatingsHUB Launched

The Canadian coatings industry is among the most heavily regulated sectors in the economy. As such it is critical that our member companies are fully informed of the many issues impacting their business and how they can ensure full compliance and mitigate risk where possible. CPCA has taken this support to a new level with the launch of a new and comprehensive Canada CoatingsHUB for member companies. It ensures critical information for members is not lost in an endless dumping ground!

The CoatingsHUB provides critical Information that is organized and searchable via key data points such as: government policies, legislation, regulations and related amendments; CPCA technical committee minutes; formal CPCA and industry government submissions; key advisories and member bulletins; relevant consultations

and regulatory deadlines; important internal and external meeting agendas; relevant industry and government presentations; 'need-to-know' dates for compliance deadlines; relevant publications and publication links; and more. Members can arrange their own personal dashboard based on their specific priorities so they can be notified when new resources of interest are added to the Hub. If you do business in the coatings industry in Canada, the Canada CoatingsHUB is critical to ensure the data you needs is rigorous, robust and relevant.

Canada-U.S. Regulatory Cooperation Council: 2018 Stakeholder Forum

The governments of Canada and the United States signed an agreement in 2018 confirming their commitment to the Regulatory Cooperation Council (RCC) to better align the regulatory approaches of both countries. The RCC's two previous work plans included measures to align the assessment process for chemicals in commerce shipped across the border.

Following the completion of the revised North American free trade agreement, the RCC is now conducting consultations on the development of its third work plan. In addition to formal written submissions, a forum was held in Washington, D.C. on December 4-5, 2018 bringing together senior regulatory officials, industry, and stakeholders from Canada and the US. CPCA and the American Coatings Association (ACA) provided submis-

CPCA Launches Comprehensive Resource Database for Coatings Industry in Canada



CPCA has been advocating for economic growth, industry innovation and sustainable practices in Canada for the paint and coatings industry since 1913. A not-for-profit industry association, CPCA represents respected paint and coatings manufacturers and their industry suppliers, selling respected brands for more than a century in Canada. These brands are at the peak of their performance for customers, all functioning at the highest levels of sustainability. CPCA also represents suppliers, distributors and affiliated companies supplying critical raw materials and services for thousands of products.

The Canadian coatings industry is among the most heavily regulated sectors in the economy. As such it is critical that CPCA member companies remain fully informed of the many issues impacting their businesses to ensure full compliance, while mitigating potential risk. CPCA's long-standing support for this effort has now been taken to a new level with the launch of its comprehensive Canada CoatingsHUB for CPCA member companies.

The CoatingsHUB provides critical information that is organized and searchable via key data points such as: government policies, legislation, regulations and related amendments; CPCA technical committee minutes; formal CPCA and industry government submissions; key advisories and member bulletins; relevant consultations and regulatory deadlines; important internal and external meeting agendas; relevant industry and government presentations; 'need-to-know' dates for compliance deadlines; specific publications, web links and more.

Members can arrange their own personal dashboard based on their specific priorities with prompt notifications sent to their inbox when new and important resources are added to the CoatingsHub specific to their identified priorities.

If you do business in the coatings industry in Canada, the Canada CoatingsHUB is a go-to resource for your company to ensure the data you need is rigorous, robust and relevant for your business. Join today to access the Canada CoatingsHUB!



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CPCA: The Face of Modern Advocacy

CPCA champions the interests of manufacturers, suppliers, distributors and affiliated companies doing business in the coatings industry. CPCA helps support member companies delivering thousands of highly functional products in a multidimensional industry that includes: automotive refinish, decorative, general industrial, marine, OEM, coil coatings, packaging finishes, powder coatings, transportation coatings and wood finishes.

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canpaint.com

The Government of Canada's Chemicals Management Plan has been assessing over 4,300 chemicals of concern in commerce since 2006 and the third phase will be concluded before the end of 2020.

sions to their respective governments focusing on the need for greater government alignment related to the registration of specific biocides used by paint and coatings manufacturers to preserve the integrity of their products. This has emerged as a major issue in Canada with recent use restrictions and bans on several biocides with an ongoing review scheduled for key substances for paint and coatings in 2019-2020. It is critical that assessors have the relevant data to make informed decisions that will allow continued use of these biocides in a wide range of product formulations.

Voc-Exempt Update on PCBTF

In August 2018, following two years of rodent inhalation exposure studies, the United States National Toxicology Program (NTP) published reports concluding "clear evidence of carcinogenicity" in a substance used widely in paint and coatings, PCBTF. It is used extensively in the coatings industry to slow the rate of evaporation. PCBTF is presently a VOC-exempt compound in Canada, all US States, and in all California air districts. The NTP findings in a number of jurisdictions in Canada and the United States are concerned with air quality, which led to further restrictions on the use of PCBTF and de-listing of it as a VOC-exempt compound. This will leave only Dimethyl Carbonate and AMP as suitable VOC-exempt compounds for paint formulations in California. A new ACA working group plans to discuss commissioning a review of the NTP report, future hazard communication implications and the development of advocacy tools. It is unknown how this will impact the situation in Canada, but we have seen a trend for VOC regulations to closely follow actions taken south of the border.

Chemicals Management Plan Update

The Government of Canada's Chemicals Management Plan has been assessing over 4,300 chemicals of concern in commerce since 2006 and the third phase will be concluded before the end of 2020. In this final phase of this 150-

year process, nearly 30 per cent of the 1540 substances being assessed are used in the manufacture of paints and coatings. CPCA is engaged daily on numerous activities representing member interests and to ensure all member companies are fully informed of the reporting requirements, compliance dates and evolving policy developments. The following is a glimpse at some of CPCA's recent activities:

- **CPCA Attends CEPA ICG Conference in Toronto:** CPCA staff participated in the biannual conference of the Industry Coordinating Group for the Canadian Environmental Protection Act (CEPA ICG). Notes and copies of government presentations are posted in the Canada CoatingsHUB section of CPCA's new website for members to access and review as needed.
- **CPCA Hosts Paint and Coatings Working Group Meeting in November:** CPCA hosted the biennial meeting of more than 40 participants on November 2, 2018, which included representatives from CPCA staff, CPCA member companies, and senior federal government officials. This day-long meeting, held twice annually, provides an important opportunity to exchange detailed information related to ongoing legislative and regulatory developments, and to help develop appropriate risk assessment measures and control instruments for the coming years. The agenda, minutes, and presentation decks are available for CPCA members in the Canada CoatingsHUB.
- **CPCA Encourages Participation in Post-2020 Consultations on the Future of Chemicals Management:** A CPCA bulletin was published in June summarizing the federal government's formal response to the Sustainable Development Parliamentary Standing Committee's 87 recommendations to amend CEPA. Government officials remain committed to continuing their discussions with stakeholders on ways to improve the Act before it can proceed with any reform. It also committed to making no amendments to the Act in the current session of Parliament. CPCA's comprehensive response to the Committee Report is available for members on the Canada CoatingsHUB and the association continues to work with members in providing feedback and information needed to ensure any future assessments are realistic and based on strong scientific data.
- **Government Launches Consultation on Widening the Scope of Chemical Assessment:** In November CPCA provided members with the government's proposed approach on three important issues in the chemical assessment process: addressing vulnerable popula-

Coatings and inks were the foundation of Andicor's launch into the Canadian specialty chemical market in 2002, and remain a key focus today.

Relationships are key to our business. We work with an exclusive network of leading international suppliers enabling us to expand our product lines to meet the evolving needs of the marketplace. Formulators are assured of quality, cost-effective products such as specialty resins, additives and pigments that meet Canadian industry standards for both regulatory governance and environmental requirements.

Formulators trust Andicor. With experienced sales representatives across Canada and a national warehousing system strategically designed to provide fast, local service to our major industry partners, our reputation is built on our accountability to deliver - every time.

In 2018, we were pleased to announce our new exclusive distribution partnership with Heubach/Heucotech, a leading international manufacturer of pigment preparations, anticorrosive pigments, organic and inorganic pigments. For more than 600 years, Heubach has shared its passion for innovation, customer care, sustainable business practices, environmental protection and quality, and we are happy to bring those qualities to the Canadian market.

Also in 2018, BWAY Corp. announced its merger with Mauser Group to create the newly formed Mauser Packaging Solutions, making the company the first of its kind to reliably and sustainably deliver products and services across the entire packaging

lifecycle for customers around the globe. Andicor is pleased to continue its master distribution partnership with the Small Packaging division of Mauser, which includes tin containers, steel pails, and plastic pails.

Finally, in 2018 Andicor successfully completed verification of the RDC (Responsible Distribution Canada) RD:2013 Code for its Mississauga, ON, headquarters.

Andicor is also a corporate member of CPCA (Canadian Paint & Coatings Association), TRFA (Thermoset Resin Formulators Association), and PAC (Packaging Association of Canada), supporting the organizations that advocate for the industries responsible for Andicor's success for more than 15 years.

Explore our refreshed bilingual website (www.andicor.com) where you can find a complete listing of all the principals and products we offer for each market segment.

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tions, how to consider the role of informed substitution, and the role of occupational exposure. Member feedback was included in CPCA’s formal response and interventions at the multi-stakeholder forum in Ottawa as these are all very important issues for the coatings industry and how they are used in assessing chemicals could have a profound impact on product formulations over the next several years.

- **Proposed Approach to Promote Transparency in Chemicals Management:** CPCA remains vigilant in maintaining the protection of ‘confidential business information’ as government considers new initiatives to promote transparency within the Chemicals Management Plan. The proposed revisions to the 2017 approach is based on international best practices on transparency and the potential opportunities to align the process for reviewing confidentiality claims with that of the US EPA. Proposed changes include additional information requirements for those companies claiming confidentiality for a substance identity, as well as if and when government could release certain confidential information publicly. Confidentiality claims for a substance identity will be reviewed after a period of 10 years. CPCA is currently consulting members on the proposed changes, which could see the release of CBI information much differently than it has been done to date. The bottom line will be just that, the ‘bottom line impacts’ any new approach could have on businesses in Canada, which are already facing a number of significant economic and regulatory challenges.

Bi-Annual Meeting of The Paint & Coatings Working Group

CPCA’s Paint and Coatings Working Group addresses the specific industry impacts of government actions on CASE formulations and products. CPCA continues working with members to meet the updated compliance requirements and reporting deadlines announced at the November PCWG meeting, such as:

- **Industry Input Essential in Consultations on Future Chemical Assessment:** The government’s upcoming Post-2020 multi-stakeholder consultation meetings in Ottawa will focus on nano-forms of substances on the Domestic Substances List (DSL), develop a policy framework for vulnerable populations, as well as expanding the use of bio monitoring in chemical assessment. Plans will also include continued engagement on the effects of low levels of exposure to certain chemicals that are endocrine disruptors and a review of international best practices to address cumulative risk of certain substances and impacts

related to labelling. Under the Post-2020 initiatives the government also intends to review options on informed substitutions and highlight the potential alternatives in existing databases; further investigate risks associated with occupational exposure; emphasize the importance of performance measurement; and enhance the information provided to Canadians about chemicals in products, including improving public outreach to specific groups.

- **Inventory Update 3 Results for Paint and & Coatings:** Following CPCA’s collection and coordination of survey data, the government reported that the paint and coatings sector uses nearly 20 per cent of the 719 unique chemical registration numbers (CAS) confirmed by Canadian industry including 19 CAS numbers for paint thinners and removers. Respondents have been contacted directly regarding concentration, children’s exposure, used as additives and intermediates, etc. This information will be important for rational decision-making related to products that are implicated.
- **Information Gathering Initiatives Update:** The government has several surveys planned, both mandatory and voluntary, for the remainder of 2018 and 2019 including impacted substances such as: certain bisphenols and possible alternatives, Batch 11 – BENPAT; commercial status information for 800 Quaternary ammonium compounds; 22 flame retardants; follow-ups related to 1400 listed domestic substances; a comprehensive survey to determine use levels and potential releases of plastic microbeads to the aquatic environment; and more. All important dates related to these initiatives are found in the “Compliance Calendar” in the Canada CoatingsHUB.
- **NSN Program Update:** CPCA distributed draft changes to the New Substances Notification Guidelines and revised forms to members. Notable changes include an improved nanomaterial section, a section on UVCBS, and the expanded exposure level reporting at all levels of the supply chain.

Federal Government to Launch Broad Survey on VOC Content In Architectural Products In 2019

CPCA consulted with government officials regarding the design of a broad national survey that will seek to compare the VOC content of all existing paint products sold in Canada with the VOC limits in other North American jurisdictions (namely OTC II States, California rules, etc.). The survey will gather information on volume of sales in order to estimate current VOC emissions reduction and cost-benefit analysis to help inform future actions. The government

is clearly preparing for further actions on VOC limits beyond 2020. CPCA continues working with officials to determine the future approach on VOCs in Canada and related timelines and enforcement plans that will flow from such surveys.

Recent Screening Assessment Reports and Impacts on Coatings Industry

A number of Draft Screening Assessment Reports and Risk Management Scope documents were released at the end of 2018. One report addressed seven of the 15 substances in the Anthraquinones group. Another was published for Solvent Violet 13, which meets the toxicity criteria for negatively impacting human health. The report also raises concerns for five other substances and a notification of a potential Significant New Activity orders should exposure levels increase. CPCA is engaging with government and members to determine the impact of these proposed actions and how they might be addressed. As usual the associated data is critical in final risk management measures that are taken, as they may lead to bans or severe use restrictions.

Another Draft Screening Report for benzophenone proposes to add Benzophenone to Schedule 1 of CEPA. Government officials informed CPCA at the November PCWG meeting that due to dermal exposure concerns the scope of risk management action would now expand beyond interior products to include exterior and dual use products. CPCA exchanged information with government officials on the frequency of use and exposure to exterior paint products and is engaging with industry for more technical feedback on this important matter now that exterior paint products are implicated.

A Draft Screening Assessment for the furans group concluded that furfuryl alcohol and tetrahydrofuran met the criteria that constitutes or may constitute a danger to human life or health in Canada. These substances are used in CASE products including wood strippers. CPCA continues working with government officials prior to the final screening assessment to clarify the use of tetrahydrofuran and the possible use of substitutes for furfuryl alcohol in wood stripper products. More information is available for members in the Canada CoatingsHUB

WHMIS/Chemicals Management Plan Joint Projects to be Implemented in 2019

As reported at CPCA's Paint and Coatings Working Group meeting, the government will be moving to include occupational exposure as part of its assessment toolkit in the CMP under Post-2020 initiatives. Government officials stated that there is no intent to amend the Hazardous Products Act or Regulations but rather to leverage complementary activities with the CMP, such as

As reported at CPCA's Paint and Coatings Working Group meeting, the government will be moving to include occupational exposure as part of its assessment toolkit in the CMP under Post-2020 initiatives.

consideration of Occupational Exposure Limits such as the case study for NMP and methylene chloride in paint strippers. It is unclear how this will evolve over the coming months, but it is one issue the industry will be watching very closely.

Status of Notice to Remove Consumer Exemption from The Hazardous Products Regulations (HPR)

A working group was established as part of the federal Government's efforts to determine how to proceed with a motion brought forward by labour and provincial government representatives. That motion seeks to remove the consumer product exemption from the labelling requirements under the Hazardous Products Regulations due to potential worker injury from using consumer products in the workplace, instead of industrial products with proper hazard labelling. CPCA and other industry representatives have requested evidence of such alleged incidents to determine the scope of the issue and possible solutions while maintaining this important exemption.

To date no examples or evidence have been provided to the working group and Health Canada officials are now exploring options to consider in moving forward. CPCA believes that the exemption should be maintained and the onus is on business owners to buy the correct products for the intended use in the workplace.

Other activity in this area relates to the modernization of HMIRA. Federal officials shared a proposal with CPCA and other industry sectors on its plan to modernize the Hazardous Materials Information Review Act (HMIRA). The amendments seek to remove the requirement for the government to act as a guarantor of the regulated party's compliance and move to more common responsibility for compliance verification. It also makes changes to fee schedules and formalizes the strict grounds and circumstances for sharing confidential business information with government programs in departments. The documents are posted in the Canada CoatingsHUB for members only. ■

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SATA Canada opened for business on January 1, 2017, the first full subsidiary of SATA GmbH & Co. KG.

SATA paint spray equipment has been available in Canada since the 1980s. The opening of SATA Canada marks a new era in how the company will service and market its products for Canadian customers.

The headquarters of SATA Canada is in Vaughan, ON. The facility, close to Toronto, occupies a total of 15,000 sq. ft., including offices, warehouse and training center. The headquarters also includes a service facility right in the building, with the goal of turning any product around within a 24-hour period.



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The SATA brand is headquartered in Kornwestheim, a town in the district of Ludwigsburg, Baden-Württemberg, about 10 kilometers north of Stuttgart. SATA is a leading spray gun manufacturer with 276 employees, active in more than 100 markets worldwide with 2,436 customers.

SATA has a long history of producing superior products of the highest quality dating back to 1907. The company's original focus was on medical instruments but began production of spray guns in 1925. The following year saw the first spray gun patent and by 1931 the company had its own line of commercially available SATA branded guns.

Throughout its history, SATA has focused on meeting the demands of new paint technologies and perfecting its equipment to attain consistency for the industry.

In 1990 SATA introduced its High Volume Low Pressure (HVLP) and Reduced Pressure (RP) technologies, which gave painters more options for atomization, while addressing growing environmental concerns.

In 2005 SATA pioneered a disposable cup system, SATA RPS (Rapid Preparation System) for the efficient mixing, painting, refilling and storing of paint. Participate in the SATA Loyalty Program and collect coins with every cup. Download the SATA Coins & More App in the App Store or Google Play Store. Set up a user account, scan QR codes located on every box of SATA RPS cups, collect points and convert them into attractive rewards for your shop.

SATA continues a tradition of quality and technological leadership with the introduction of the SATA air vision 5000 system for painter health protection and the SATA truesun LED color check lamp.

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CHOICE BROADENS IN **Manual Spray Guns**

It goes without saying that the more you know about your paint spray gun, the better it will perform for you, but this is also an area of the industry where there are a staggering number of choices.

In the manual arena, new products continue to come to market, despite the popularity of automated systems. **SATA** says the greatest advances it has made in this product category are with its new SATAjet X 5500 and X-nozzle system. The system offers painters a choice, whether they are using HVLP or RP technology, of two different fan shapes, and I and O nozzle.

“Our customer’s main requirements are quality and consistency,” says John Turner, General Manager for SATA Canada Inc.

With that in mind, the company has designed what it calls a straightforward nozzle system: Both proven application technologies – HVLP and RP – remain available, but now each of them offer the additional choice between I and O-nozzle sets. In line with the increasing nozzle sizes within each of the respective technologies (HVLP and RP), the material flow rate increases too, with constant increments – which means that the spray fan size and width remain unchanged across the entire nozzle spectrum. In essence, end users can now rely on a transparent and con-

sistent system which offers them clear and well-structured application options.

O-nozzles have an oval-shaped spray fan pattern with a larger dry zone and a wet core to accommodate increased application speed at the expense of slightly less application control during the painting process. The film build per coat in comparison to an I-nozzle of the same size is slightly higher.

I-nozzles instead have a parallel spray fan pattern with a minimal dry zone and a drier center which is ideal for painters preferring a reduced application speed and maximized application control during the painting process. The film build per coat in comparison to an O-nozzle of the same size is slightly reduced.

Depending on the properties of the paint system, the climatic conditions and the application technique, each painter can now select a spray gun with the suitable nozzle set for their individual requirements. **SATA** says the consistency of the system makes it easy to choose the correct nozzle option to achieve the optimum finish.



The new SATAjet X 5500 and X-nozzle system.

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- Powder Coating • Electrostatic

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- Xcite™ Light Airmix® manual spray gun focuses on lightness, simplicity and maneuverability. The Xcite™ Light can be partnered with our Airmix® pumps to create a finishing system for wood applications.
- FPro and FPro Lock airspray manual spray gun in conventional, HVLP and LVLP, offer effortless spraying and a superior finish.
- SFlow™ airless manual spray gun can be partnered with 10-C18 Airspray system to create a finishing system for airless applications.
- ASB airless automatic spray gun on base plate offers superior atomization whatever the line speed thanks to perfect balance between high pressure and high flow rate. It offers precise application - coating applied directly on the target - due to fast response time.
- A wide range of Airspray Tanks that can be partnered with FPro manual spray guns.
- Nanobell 2 robotic bell sprayer is the perfect robotic bell sprayer for manufacturers of small to average plastic and metal parts and for wood industry manufacturers.

- Inobell powder bell sprayer is a rotating electrostatic powder bell sprayer that delivers high performance, excellent finishing quality, and easy integration.

- e-Jet 2 NDT is designed to be used for the Non-Destructive Testing process. The system is compact, stable, and easy to move and use in all circumstances.

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We bring expertise to a wide variety of markets including, Wood, Transportation, Industrial, Construction, Agricultural, Consumers, and Automotive, which will be a major focus for 2019. Our automotive capabilities include car paint, truck cabs, exterior and interior plastic parts, refinishing, buses, body shops, powertrain, wheels, and metallic parts.

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MANUAL LIQUID PAINT SPRAY GUNS



Nordson says its electrostatic Trilogy manual spray guns, in conjunction with the IPS power supply, feature Automatic Frequency Control (AFC) which assists users with transfer efficiency. The combination of spray gun current and part distance creates a variable micro-amp draw on the system; the higher the micro-amp draw on the system, the less efficient the system performs. The micro-amp draws on the system increases and decreases depending on two factors: the paint's conductivity level and the distance between the operator and the substrate being painted. With the Trilogy AFC feature, the micro-amp draw is manually set to the maximum allowable level, and the voltage automatically increases and decreases to maintain the micro-amp set point. This allows for a more efficient painting system.

"When the IPS power supply is in standard mode, the voltage stays constant and the micro amp draw fluctuates," says Brad Syrowski, Nordson Corporation's Liquid Business Development Manager.

"The Faraday Cage effect may be present. Trying to paint into corners, cracks and crevices is difficult – paint

will go to the side walls instead. In Trilogy's AFC mode, the micro-amp draw remains constant, voltage fluctuates and the system overcomes the Faraday Cage effect. Corners, cracks and crevices are painted more efficiently than by guns without Nordson's Trilogy AFC technology."

To meet the needs of North America, Asia and Europe, the largest markets for Nordson's Trilogy non-electrostatic spray guns, Syrowski says the guns are available in two configurations: standard or metric fluid and air fittings. "This allows customers to adapt the spray guns to any existing painting operation or install them in a new production line."



Prona Tools Inc. was established in Taiwan in 1985, and has had North American offices in Toronto and Vancouver since 2013. It is also active in Italy, Germany, United Kingdom and various Asian countries. The company has built its reputation on having a sophisticated research and development team and rigorous quality management. Its factory is in Foshan, Guangdong province, on the south of mainland China. This plant occupies 16.8 acres which is equal to 12.7 football fields of manufacturing, research and office space, and is equipped with highly advanced machinery and equipment for manufacturing. The company holds the rights to a range of technical patents it has developed, which has dramatically increased in numbers in recent years. These resulted from the company's focus on developing and constantly improving its own technology. Prona has focused on becoming an internally recognized brand, and enters the global markets where it intends to maintain a permanent presence.

Prona's signature products are its spray guns, pressure tanks, fluid agitators and double-diaphragm pumps. Its new product, the R-2200, an air-assisted airless manual spray gun, sprays phenomenally on all surfaces with all materials, because it comes with a large selection of nozzle sizes. Excellent transfer efficiency meets the highest requirements of today. The R-4300S is Prona's newest air spray gun, fully suitable for all waterborne material. Proven technology in atomization has

been incorporated into this spray gun, making it extraordinary. The MRS2 spray gun is lightweight, works with all waterborne material, and is great for mold-release agents, as well as wonderful for sprayers with smaller hands. It is also easier to maneuver.

Prona aims to be a leader in the industry and a serious partner for the customers that purchase its products. The company's commitment is to offer all of its clients reliable, high-quality products and superior services.

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MANUAL LIQUID PAINT SPRAY GUNS

Xcite Light Airmix Manual Spray Gun.



FPro Airmix Manual Spray Gun

SAMES KREMLIN has also launched a number of new products including the Xcite Light Airmix Manual Spray Gun which focuses on lightness, simplicity and maneuverability. For maximum benefits, this spray gun is available in two versions: 60 bar and 120 bar (870 psi & 1740 psi) and can be partnered with Airmix pumps to create a finishing system for wood applications.

The FPro Airmix Manual Spray Gun is available in conventional, HVLP and LVLP and offers “effortless” spraying.

The SFlow 275 & 450 Airless Manual Spray Gun is an airless spray gun used for applying protective coatings and is available in 275 and 450 bar (4000 and 6530 psi) pressures. **SAMES KREMLIN** says this gun delivers real product savings for industrial applications while the ergonomic design offers flexibility in extreme conditions and is ideal for handling high solid content paints and high rich zinc primers. The SFlow promises high transfer efficiency of 81 percent, good atomization quality, and is designed for high duty industrial applications.

Founded in Taiwan 30 years ago, **Prona** Tools says it undertakes extensive research and development to ensure it uses the best materials available, and invests in state-of-the-art precision machinery for all of its manufacturing processes.

Prona says its brand stands apart from others because “we strive for the best quality at the most reasonable prices.” The company offers a wide range of manual spray guns offer something for every type of painter and application. The R-203-S, for example offers high efficiency and advanced coating-saving technology. Its lightweight and ergonomic body design makes the gun easy to control. The polished surface is easy to clean and maintain, while fine atomization provides a bright spraying effect.

The SGD-71 can be used for decoration and spray out various patterns such as floss, coarse dot, fine dot, etc., with various spray covers.

Prona R-4303



Prona SGD-71



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A New Perspective for **Matte Coatings**

The Next Generation of UV Curing Technology Arrives

BY CHRIS DAVIS

RADIATION CURING has long been used in the coating and finishing arena, and has continued to develop as the formulations have changed, and ultimately fostered by the market-driven finish. There have also been changes in industrial processes, commercial viabilities, quality expectations and environmental regulations.

Traditionally, high gloss finishes have been sought to indicate a “high quality” look wherever the end product is finally installed. In the world of radiation curing, this was usually done with UV lamps, working in tandem with coatings, specifically formulated to cure when exposed to UV light. The mechanism is photopolymerization, a very quick chemical reaction that utilizes photons in the UV spectrum to activate the chemistry of the coating and create a chain reaction, which results in a cured product.

There are a number of advantages in curing in this manner. In simple terms, the reaction is so quick that this is an ideal process for production line scenarios (continuous feed). There is no mass transfer, meaning that the thickness of the coating that is applied is the resulting thickness of the cured coating. It also allows the coating itself to be recycled in the coating applicator. The finish has a superior wear and chemical resistance. There are no VOCs that need to be considered with UV, therefore simplifying the process and negating the need for all corresponding plant requirements. This also saves money. Ovens, with their real estate and cost issues, are no longer required, as a typical curing setup is three meters long. Finally, UV coatings are widely available through the national manufacturers.

A classic UV configuration for a flooring line, for example, would consist of a pre-cure unit and a post-cure unit. The pre-cure generally is used to “set up” the desired optical finish i.e., matte or gloss. Gloss is relatively straightforward, as the higher the power of the lamp (in simple terms), the more glossy the finish. Matte effects are traditionally generated through the chemistry of the coating, where the matting agents are activated by the pre-cure. The post-cure unit, in general terms, provides a final cure and locks the desired finish as generated in the pre-cure unit.

This two-step process is widely used in the wood and vinyl flooring industry. Similar systems also exist in furniture.

With a classic UV lamp (medium pressure arc), the output spectra are dependent on the dopant (additive) used in the bulb. A Mercury doped bulb will produce a UVC rich spectrum (short wave length/high energy) and an Iron doped bulb will produce a UVA rich spectrum (long wavelength/less energetic). The UVA is used in the pre-cure for the matte/gloss effect and the UVC is used to create the surface finish with the short wavelength in post-cure. Both will also produce energy in the IR band (heat) which is not desirable and is thermally managed with water channels acting as heat sinks in the lamp heads. These are part of a circuit including a heat exchanger, to precisely manage the heat.

There has been a shift with coating manufacturers to utilize a different type of UV lamp which is nearly monochromatic in UVA (long wavelength) and doesn't have

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Distribution Centers

Katilac Coatings operates two of our own distribution centers; one at our factory in Burlington, ON, and one in Woodbridge, ON. We are also building a network of highly competent and technically proficient distribution partners across Canada and into the United States. At any of our locations or from any of our distributors, you can get high quality custom color matches, the full assortment of Katilac products, and technical or application help if you should need it.

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the attendant heat that a classic UV bulb will produce; this is the LED array. As the name suggests, this type of UV lamp utilizes special light emitting diodes (LED) to produce UV output. The UVA output can only be used for the pre-cure station to set the finish as needed (matte), but the chemistry of the coating needs to have the correct formulation to activate correctly with the monochromatic output. Coatings are now coming onto the market which are LED-compatible. The post-cure, is as per the classic configuration, as UVC (short wavelength/higher energy) is needed for the final cure (LEDs are currently not suitable for UVC output).

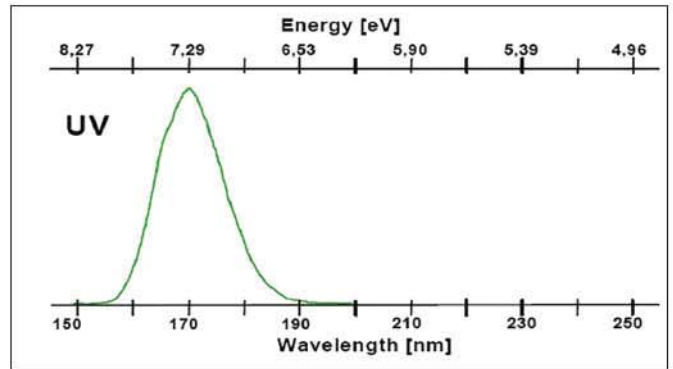
The final variation of this pre and post cure combo, is the excimer variant. An excimer lamp has a very high short wavelength monochromatic output, in this case at 172 nm. This means very high energy which can be used to mechanically deform a surface, causing shrinking of the top layer. Basically, it cures the top layer of a coating that quickly that it creates microfolds, and these microfolds diffuse light, giving the matte effect. Again, this surface needs to be finally cured by a standard UV lamp, as we saw with the LED configuration.

There are several advantages with excimer. One, the formulation does not require matting agents as this is created mechanically, thereby simplifying the process and reducing the cost of the chemistry, as matting agents cost dollars. Two, the excimer lamp can be a lot closer to the post-cure lamp, so it saves on real estate and shortens production lines. It should also be noted that matte finishes produced in this way not only are very scratch-resistant, they also offer anti-fingerprint and anti-grease properties. The excimer matte effect has better properties compared to the matte effect with chemistry: Higher mechanical and chemical resistance and more matte.

Another advantage: Customers don't need to change the coating when running high gloss and switch to supermatte - the switch can be performed by pushing the "on" button for the excimer. Therefore, there are no downtimes for changing coating, yielding higher productivity and higher availability of production machine. Another advantage of using only one coating to produce both high gloss and supermatte is reduced warehouse costs for storing different coatings and cheaper costs for purchasing the coating.

One disadvantage of excimer, is that nitrogen is needed to create an inertisation chamber (devoid of oxygen), which adds to the cost of operating this technology. Depending on the viscosity and opacity of the lacquer/varnish, this combo may require a pre-gelling unit to achieve the matte required, meaning additional capital expenditure for a UV lamp. UV manufacturers and all coating suppliers in general suggest using pre-gelling to achieve a soft-touch effect.

This basic overview simply looks at the process of



radiation curing; there are a variety of other factors that are considered for a transition to UV. This shift usually indicates a change in the coating/lacquer/varnish chemistry and perhaps another supplier to develop the specific characteristics. From an operational perspective, UV/LED/excimer is relatively easy to assimilate and operators have usually mastered the system within a few weeks of the post-installation training.

From a mechanical perspective, all three variants can be fitted into new coating lines, and just as easily retrofitted into existing lines. Curing widths range from 10 in. up to 90 in. and line speeds are compensated by mounting the correct number of lamps for the output required.

With the advent of digital print, this has shepherded in small batch production for the decorative elements of the end product, but has little effect on the desired finish (or characteristics) as radiation curing provides good economies for small and large runs alike.

One area that will generate questions is quality control. How do we define cured? This is often inferred through mechanical and optical tests, but depending on the formulation or development process, may require more sophisticated (accurate) methods of measurement or expertise which may not be in-house. Formulators and manufacturers of radiation curing equipment have long worked together as it is a symbiotic relationship and both have fully competent technical staff to guide companies through the process who are considering a shift to UV coatings. Additionally, some UV manufacturers offer methods to determine the crosslinking with a FTIR spectrometer (to measure C-C double bonding), migration testing, and thereby establishing a defined and checked process window.

As with all new methods and processes there is a discovery and research phase, especially as these curing systems are installed on critical production lines. The UV platform has been operating in the wood industry for nearly 50 years and there is an extensive application lexicon coupled to lab development resources at the UV equipment manufacturers, which will provide qualified answers to companies considering the change to UV. ■

Chris Davis is Head of Sales – Web & Industrial Systems, IST America. He can be reached at Chris.Davis@usa.ist-uv.com.



Front row: PCI Officers, Chris Merritt, John Sjudges, Suresh Patel and Sue Ivancic. Back row: Trena Benson, PCI Executive Director, Tom Whalen, Ron Cudzilo, John Cole, Chris Beninati, Paul West, Rick Gehman, and Shelley Verdun.

PCI Announces 2019 Board of Directors and Executive Officers

The Powder Coating Institute (PCI) recently announced its Board of Directors and Executive Officers. They are, President: John Sjudges, Sales Manager, Midwest Finishing Systems Inc.; Vice President: Suresh Patel, Sales Director – Central America, BASF/Chemetall US Inc.; Secretary/Treasurer: Sue Ivancic, Value Added Services Coordinator, Nordson Corporation; Past President: Chris Merritt, General Manager, Gema USA.

Three newly elected board members include: Shelley Verdun, Global Product Manager, PPG Industries; Tom Whalen, Director, Marketing and Segment Strategy, TCI Powder Coatings; and Rick Gehman, President,

Keystone Coating LLC, who was elected as the Custom Coater board representative.

In addition, officers serving on the Board of Directors for 2019 are: Chris Beninati, Sales Manager, Elcometer, Inc.; John Cole, President, Parker Ionics; Ron Cudzilo, Regional Sales Manager, George Koch Sons, LLC; Paul West, Director of Marketing, Sun Polymers International, Inc. and PCI Legal Counsel, David Goch, Partner, Webster, Chamberlain & Bean.

PCI says all of the members' dedication to the organization benefits the powder coating industry on every level.

www.powdercoating.org

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ership of the company which my father and mother built into a seasoned global manufacturer while maintaining our three core principles of developing industry innovation, utilizing the talents of our employees and manufacturing quality equipment," Shields says. "I look forward to celebrating our 80th anniversary in 2019 by continuing our growth trajectory, launching innovative,

new products and manufacturing the highest quality of standard and customized pumps and parts washers."

Additionally, Bill Cox has been named Director of Engineering.

www.graymills.com



Kristen Shields

Canada Woodworking East

Members of the secondary woodworking market from across Quebec and eastern Canada including cabinet manufacturers, residential and commercial furniture manufacturers, architectural woodworkers, millworkers and custom wood product manufacturers, attended Canada Woodworking East in Saint-Hyacinthe, QC, in October. Check out some of the photos!



Venjakob - Customized Finishing Solutions

Venjakob is a leading manufacturer of highly automated finishing systems, serving a wide range of industries. The still family-owned company was founded in 1963 and has developed into a technological leading group of companies. Group members include Venjakob Maschinenbau GmbH & CO. KG in Rheda-Wiedenbrueck/Germany, Venjakob Umwelttechnik GmbH & Co.KG in Sarstedt/Germany and Nutro Inc. in Strongsville, Ohio. There are numerous locations worldwide, among them Venjakob North America Inc. in Bolton, Ontario.

The Venjakob group is pioneering new technologies in paint line automation, robotic paint finishing including part washing/cleaning and pre-treatment as well as conveyance, drying, curing (UV, IR and convection) and exhaust air filtering.

Venjakob and its U.S. subsidiary, Nutro Inc., offer plants for almost all coating systems, such as water-based, solvent-based or UV paint. Depending on requirements, these systems apply effect, decorative or functional coatings, and can also comprise pre-treatment/cleaning/activation/drying and an exhaust air purification system. Whatever you coat - flat or 3D-parts, mouldings, profiles, tubes or even rotationally symmetrical components, from batch size 1 to serial production - you can do it with a Venjakob product finishing concept.

We excel at solving problems and eliminating the risk of complex finishing applications. Our systems are designed and manufactured for reliability, maintainability and durability.

To achieve the highest quality and maximum customer satisfaction, we draw on the expert knowledge of our employees, and purchase exclusively first-class quality components.

Our Technical Centers allow demonstrations and tests of machines and systems under realistic production conditions. Customers and paint manufacturers can test and examine the complete process when planning new machine lines and methods.

Quality and competence is also provided by our extensive after-sales service and spare parts department.

Environment

For decades Venjakob has lived the motto: environmentally friendly - economical - reliable. Venjakob does this not only in the design of machines. Our DIN EN ISO 9001 and 14001 as well as our AEO "Directorate General Customs and Taxation © European Union, 2007-2019" certificates document our high-quality and reliable performance.

A large number of in-part patented product developments allow energy-efficient, environmentally sound and economical production.

The following industries/sectors, among others, use Venjakob/Nutro coating concepts:

- Wood and furniture: solid wood, veneer, MDF, furniture components, doors, windows, interiors of boats and interior decoration for shops
- Plastic and automobile supplier industry: interior, exterior, rims, household supplies, entertainment electronics
- Glass and photovoltaic: glass panels, (lotus effect, decoration, anti-reflective and nano-coating)
- Facades/building materials: acoustical ceilings, flooring, facing and ceiling tiles, roof tiles
- Metal/steel: plates, tubes and pipes, girders (corrosion protection)
- Rubber
- Sanitary fixtures
- Aerospace, etc.

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FABTECH 2018

FABTECH 2018, North America's largest finishing, metal forming, fabricating, and welding event, welcomed more than 1,500 exhibiting companies and a total of 33,755 attendees from 75 countries to Atlanta's Georgia World Congress Center in November. On these pages is a selection of photos from the paint and coatings industry.



continued on page 57

No One Expects More from Us Than We Do!

Jena Industries is a turnkey designer, manufacturer and installer of innovative, energy-efficient finishing systems.

Jena offers turnkey systems including multi-stage pretreatment systems, single stage pretreatment systems, convection and infrared ovens, automatic conveyor systems, programmable hoist systems, wet and powder application booths, environmental rooms and more. Our systems are designed in partnership with our customers' chemical and paint suppliers to ensure optimal system operation.

Control systems designed for today's production requirements with tomorrow's needs implemented for growth. From concept through to production start-up, Jena Industries can automate every step of the finishing system process.

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- System retrofits
- System relocations
- System maintenance
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- System approvals
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- Chemistry solutions

Success Stories

When a lighting manufacturer in Guelph, ON, needed to upgrade their powder coating system to meet AAMA 2605 standards and increase production throughput, Jena was awarded the contract in January 2018 to completely reconfigure the existing system and install a new six-stage pre-treatment machine and infrared cure oven. Curing time on the largest part (900 lb. extrusion) was reduced from 58 minutes to less than 30 minutes. Working with the chemical manufacturers, Vanchem Performance Chemicals and Calvary Industries on the design of the pre-treatment machine, the customer received scores of 8/10, 8/10, 9/10, 10/10 and 10/10 from testing completed by TCI Powder Coatings.

An industrial drive manufacturer in Cambridge, ON, works with Jena Industries on its finishing system improvements. Jena was first selected in 2016 as its industrial chemical representative for its five-stage pre-treatment machine.

In fact, Jena works with chemical manufacturers Vanchem Performance Chemicals and Calvary Industries, at the customer's facility. Salt spray performance on HRPO consistently exceeds 2,000 hours, far surpassing the customer's aggressive internal quality standards. One of the driving forces of the chemistry change was the environmental friendliness of the products in

order to bypass the industrial wastewater treatment system, saving the customer money for both treatment and disposal. Jena recently completed two additional large projects for the customer in 2018 that offer paybacks of less than 18 months each.

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Ultra-violet Curing Systems

ULTRA-VIOLET CURING has seen more technical progress in recent years than other parts of the coatings industries. Research into the physics of the behavior of light has yielded new technology, as well as a new understanding of ultra-violet light's reactive effects on certain polymer chemistries.

The process received an important boost with the advent of LED UV lamps, which drastically reduce energy usage, and last several times longer than conventional kinds of lightbulbs. This technology is still under active development – LED can still be described as an emerging method, not a mature one – but the first commercial units are now in use.

Refining the equipment for UV curing and drying is an ongoing project. The advantages included reducing energy usage and an almost non-existent level of hazardous emissions.

The downside includes design limits on the configuration of parts being coated and also the initial capital investment. As with any developing technology, equipment costs are coming down, but there is still a careful calculation to make before a company installs its first UV unit.

The process is used in an increasing number of industries. The automotive industry uses it to produce scratch-resistant coatings. Some digitally printed items are being protected by UV coats. Even in construction, fiberboard panels used for exteriors are acquiring UV finishes in some instances, though the longevity of exterior UV coatings is still currently seen as sub-optimal.

Venjakob's Ven Dry UV dryers use performance-optimized UV lamps. These, the company says, feature emission spectra perfectly matched to the individual paint/lacquer.

"Mature transformer technology in combination with high-performance UV lamps ensures safe and reliable operation," according to Venjakob. "Fields of application include the furniture industry and surface finishing, and the system is equally suitable for workpieces made of wood, plastic and metal."

The company's new generation of dryers has what it calls Surround-UV technology, which offers efficient use of energy through optimized high-reflection radiators. There is throughfeed curing of surfaces and all edges thanks to a newly developed reflector.

"Frequently, one radiator is sufficient for clear lacquers, though color paints require two radiators," Venjakob states. "This system offers more than 20 per cent additional energy savings compared to the predecessor model, and it features a notably reduced IR portion (cold light) for sensitive materials.

The lamps feature a long operating life of the lamps, and the system is quickly convertible for other workpieces, materials and/or lamps. The whole thing is designed to be a variable and modular system.

Surround-UV technology provides efficient control of the UV lamps to ensure stable operating parameters, while the infinite setting range from 50 to 120 W/cm permits highly accurate operation and UV lamp readjustment. Mains electrical fluctuations of up to 10 per cent are balanced, and there is easy accessibility for maintenance and lamp change.

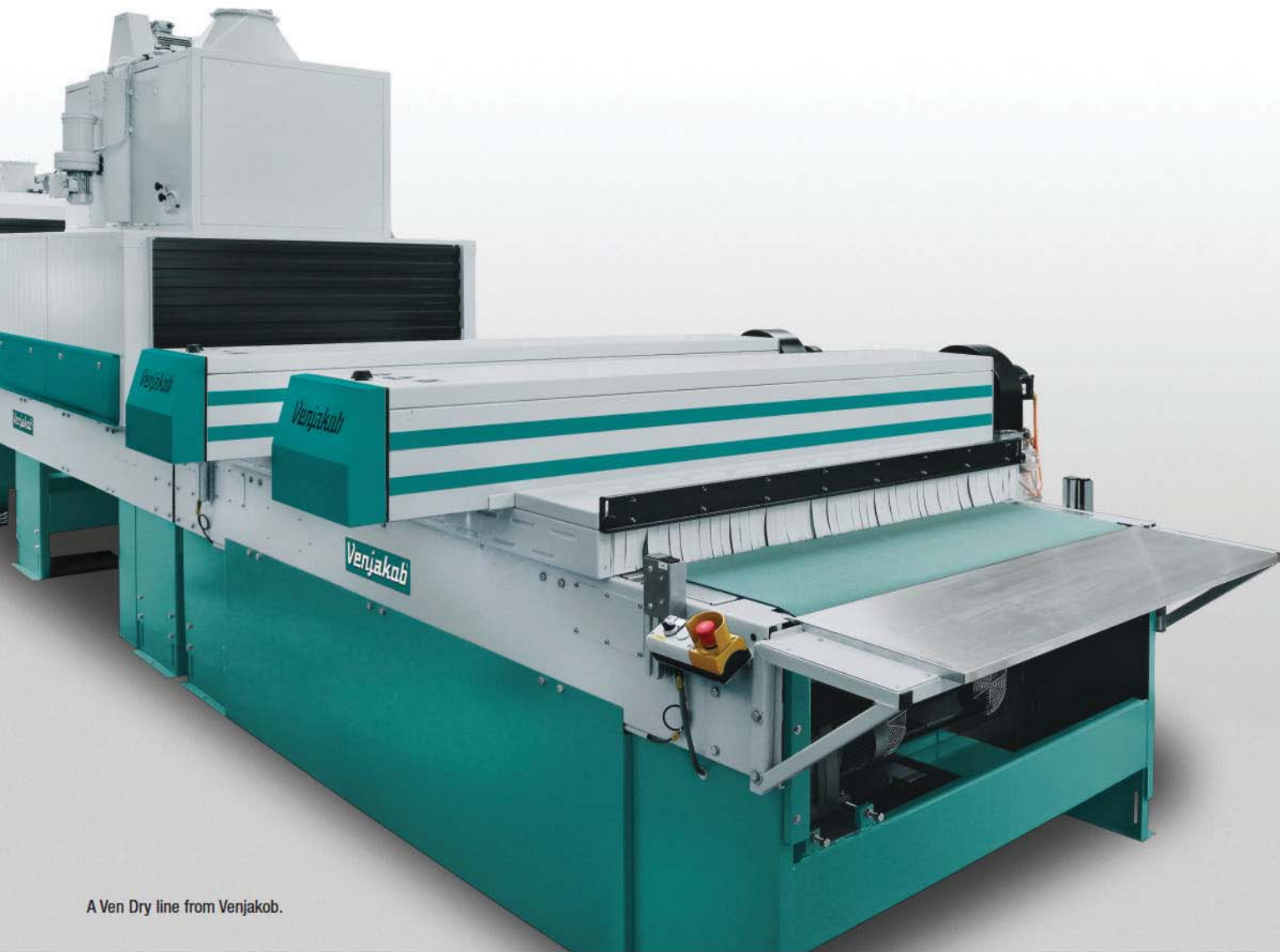
Superfici is another machinery supplier that has built up a full line of UV curing and drying systems. It offers a range of UV systems with different wavelengths (from 200 to 2300 nm.) and of different types of reflectors.

Modules with reflectors are available for use on flat lines, characterized by a high focal field, while modules for "cold polymerization" can be used with heat-sensitive materials and three-dimensional polymerization modules.

Superfici says its Matrix UV LED system "perfectly meets the level of performance required by the most innovative UV coating cycles. Thanks to an intense work in co-operation with the main finishing manufacturers, Superfici has optimized the various systems of its range to meet the demands of applied energy levels, emission wavelengths and efficiency expressed precisely by the various lacquer products."

The Matrix product line offers systems suitable for both wood finishing and the graphic arts.

The company's Selecure is an irradiation line based on a modular system with a single irradiation source. The modules are made from anodized aluminum with hinged doors (top and front) for easy and immediate access to the reflector and the lamp. All modules are supplied with a tilting reflector and power reduction device in case of temporary interruption of the line, to protect the parts to be irradiated and also the conveyor from dangerous overheating.



A Ven Dry line from Venjakob.

It also protects the radiant source from premature aging caused by numerous ignitions. The system is suitable for installation on rod or belt conveyors.

Superfici's Supercure is offered as a high efficiency electronic system for UV modules that guarantees maximum stability to the lamps and reduced energy consumption. The system is applied to each UV surface module.

The systems are integrated with a touch panel connected to a small PLC installed inside the electrical panel. The system, in addition to displaying the operating status of the UV system, allows the adjustment of the lamp power. It is also possible to manage, by an automatic control, the lamp power compensation system, according to the actual UV power emitted by each lamp.

Superfici maintains a lab in Concord, NC, where customers can send samples for analysis. This, the company says, makes it possible to check how to avoid potential problems and achieve optimal results.

Phoseon has targeted the market for air-cooled LED light sources. These, the company says, have grown in demand, but current applications have presented challenges in over and under-curing of materials, along with the degradation of LED output over time.

"To ensure users have high-performance and consis-

tently accurate products, Phoseon has developed TargetCure Technology," the company says. "This technology uses proprietary and patented Phoseon innovations to provide users the precise and predictable UV output they demand."

Over time, UV output in these systems slowly degrades. As ambient air temperature rises, irradiance lowers, producing under-cured material.

TargetCure Technology continually monitors the lamp's efficiency and adjusts output as it ages, providing stable output for a longer period of time. It provides stable output through seasonal and daily temperature variations.

"When air-cooled products are first turned on," the company explains, "they overshoot the target irradiance, resulting in over-cured and brittle material. TargetCure Technology delivers precise irradiance, eliminating overshoot, providing a consistent and reliable cure."

Another aspect of air-cooled LED light sources Phoseon has addressed is the sound levels the systems can produce. It has developed WhisperCure Technology to provide a quieter solution with high UV output and small form factor.

"WhisperCure Technology," Phoseon states, "uses proprietary and patented innovations to provide a unique,

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compelling solution. This solution translates directly to higher productivity, thereby improving profitability.

“Air-cooled products can be loud. A fast rotating fan typically equates to increased sound as the fan’s blades must turn at a high speed.

“WhisperCure Technology provides high power air-cooled lamps at a fraction of the sound level previously required. Operators of those machines will experience a safer environment as the sound will be below designated operating conditions.”

Using this approach, machine builders can now build wider, higher-power air-cooled systems that previously required water-cooling, enabling an overall lower-priced solution without the need for additional cooling equipment.

Heraeus Noblelight has emphasized its Semray LED UV system, which it says fulfills many different curing process requirements, without sacrificing quality and performance.

“Unlike traditional UV curing which has a broad spectrum output,” the company explains, “the output of UV LEDs for curing is currently available in one of three narrow, nearly monochromatic, wavelengths – 365, 385, 395 and 405 nm. While this means less wasted output caused by unneeded or unusable wavelengths, it also means chemistry formulators

needed to develop new chemistries responsive to these specific wavelengths while still delivering the specific ink, coating, or adhesive requirements.”

Some applications, including UV powder coating, spot cure and laminating adhesives already use longer wavelength additive, or “doped” arc lamps, so these applications are a natural fit for using UV LED curing. UV LED curing will, the company believes, inevitably replace traditional UV curing technology for some ink, coating, and adhesive applications.

Challenges remain for UV LED curing in some manufacturing processes, including finding suitable and available chemistry formulations. Applications that require a hard coat are especially challenging for UV LED curing, according to Heraeus Noblelight, since short wavelengths, well below 365 nm, are needed for surface curing. The company recommends pairing UV LED curing with existing UV curing as a solution.

Such approaches are only going to increase as UV curing continues to penetrate the coatings marketplace. As new technology continues to be proved in the workplace, new permutations and combinations will become commercial, and new applications will follow. ■







Regulating Plating **Temperatures**

UNDERSTANDING TEMPERATURE CONTROL is one of the first principles platers have to grasp. Too much heat and the plated coating is either too fluid, or displays other properties that aren't helpful. Too little, and the plating layer won't flow or cohere properly.

Obviously, the switch to digital from analog controls is complete, even if there might be a few niches where analog is still used, or where current digital systems cannot operate. But these are few today.

"Higher demands on accurate process temperature controls in plating tanks, documented compliance and safety concerns, require the use of digital temperature controls," according to Titan Industrial Heating Systems. "Metal finishing tanks with old-style, gas-filled capillary assemblies for temperature control lack the accuracy (which should be +/- 5 F) and safety required." They can, Titan says, fail in the closed position.

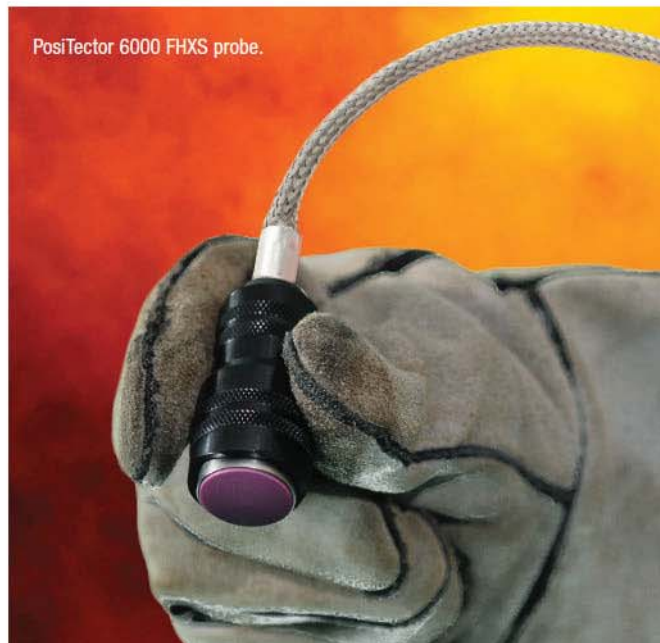
The temperature controller receives inputs from a temperature sensor (for example, a J-Type thermocouple) and resistance temperature detector (RTD). The display of the digital temperature controller can be up to 100 ft away from the metal finishing tank. If the controller is connected to a RS-485 communication system, operators can control, monitor and record the temperature settings from any remote location.

Safe operation of a plating or rinse tank, Titan states, includes the installation of a liquid level control. Integrating this safety device into the digital temperature control terminal box is economic and improves operational safety, and can have an impact on insurance costs.

The company offers simple M 25 digital temperature controllers that feature on/off controls without proportional integral differential (PID) loops. It also makes metal finishing tanks with accurate temperature control, for electroless nickel plating, Watts-nickel plating, rhodium plating, palladium plating, gold plating, anodizing, and hard chrome plating, which all require temperature control with PID control loops (M43) for ramp and soak. In hard chrome plating tanks, the chemical solution needs to be heated and cooled to stay within 1 to 3 F of the setpoint.

Titan's product offering for plating covers a broad range of units, with or without PID controls.

Clearly, determining temperature control requirements depends on the metal used for plating. Chrome, for example, tends to soften in elevated temperatures, although it



retains its low coefficient of friction and resistance to oxidation and corrosion, which provide the resistance to abrasion and chemical attack. Higher temperatures in the plating process produce a lower Rockwell C hardness, so that a 400 F process typically results in 69 Rc, while an 800 F process would produce a finish at around 66 Rc.

In situations like this, precise regulation of the process temperature becomes highly critical.

At the precious metals end of the business, gold is also very temperature-sensitive in plating. ThermoFisher Scientific says that plating results are best when the temperature is kept at a constant high level, appropriate for the type of metal. Voltage control, of course, is a variable that needs to be regulated as well, the two forces inevitably mutually influencing the total process.

In sulfuric acid-based plating processes, increasing temperature or increasing acid concentration has significant effects on the coating characteristics, especially outside of conventional commercial ranges. General Magnaplate Corp. reports that both factors are found to radically increase the rate of dissolution of the oxide by the sulfuric acid. This results in thinner, more porous and softer metal films.

"At temperatures over 80 F, the rate of dissolution of the anodizing film can match the rate of coating formation," the company says. "You could dissolve the whole part and never achieve a thickness much greater than the barrier coat."

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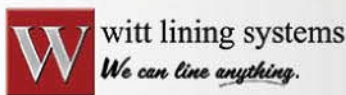
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This balance of deposit/coating rate versus dissolution rate is affected by the variables: concentration of the acid, the temperature, and the ability of the system to remove the heat generated by the mechanism that produces the oxide film. The current flowing at the surface of the part is creating the anodizing coating and producing heat, because the thickness of the coating insulates the base metal/reaction site.

This causes a marked temperature differential between the mass of the electrolyte and the base/barrier layer of the part. It is estimated, according to General Magnaplate, that base temperature can be more than 250 F.

“The solution temperature in a conventional sulfuric acid anodizing bath should be near freezing,” the company adds, “with good solution flow past the parts being anodized to minimize the dissolution effect. Keeping the electrolyte solution as cold as possible allows the film thickness to be maximized for a given voltage and time.”

All this requires quality temperature measuring equipment. As one example, the PosiTector 6000FXHS Xtreme series handheld units are designed for thickness measurement, but work in environments up to 500 F. They can measure coatings up to 400 mil thick.

The unit has an alumina wear face and a braided steel

cable to manage the heat. It uses magnetic measuring principles, so it works only on ferrous metal parts.

Precision Process Equipment provides control systems for a variety of wet processes that include automatic rack and barrel plating lines, material handling, and assembly automation. The company also upgrades and retrofits existing lines.

Its data collection and control systems software can sense temperature, flow, pH, pressure, speed, torque, acceleration/deceleration, levels, amperage, voltage, ORP, and more.

In either designing a new plating line or upgrading an existing one, there is always a custom aspect to the process. Because of this, there are relatively few standard controls systems in the market.

At the same time, equipment suppliers are used to having to deal with special requirements on every new order. This means the customer has a good opportunity during a refit or a new installation to push closer to its own ideals.

There are always new things for a company to learn about its own processes. But improving the precision of them is only going to make any given operation that much more competitive. ■

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Tried and True Emissions CONTROL TECHNOLOGIES

AIR POLLUTION HAS TAKEN a front seat in driving environmental decisions in the industry around the process of anodizing and metal plating.

Environmental systems companies such as Anguil Environmental Systems says manufacturers are committed to staying ahead of expanded government regulations, and that air pollution control technologies are thriving. Anguil is a global provider of industrial air pollution control, wastewater treatment and energy recovery systems operating out of Milwaukee, WI.

“These abatement technologies are purchased to bring manufacturers into compliance with federal regulations for emissions such as Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants (HAPs),” says Kevin Summ, Director of Marketing. “The hydrocarbons and solvents in paints and coatings are known carcinogens and contribute to smog.”

He adds, most air pollution control solutions are normally dictated by the volume of air to be processed and are priced accordingly.

Because of the associated health and environmental risks, regulatory agencies like Ontario’s Ministry of the Environment and the Environmental Protection Agency (EPA) in the United States have made emissions control equipment mandatory. Over the last 20 years, EPA regulations under the Clean Air Act have driven capture efficiencies toward 100 percent, which prevent emissions from ever entering the atmosphere.

Last spring, Ontario revised its rules on air pollution and continues to develop new air standards and rules for industrial air emissions. Since Ontario sets the standards for the largest block of industries in Canada, it is noteworthy that a focus of the recent revisions included new rules for regulating air contaminants for metal finishers and foundries and more stringent sulfur dioxide air standards.

Typical emissions control equipment, like air and wet scrubbers, mist collectors and electrostatic precipitators, oxidizers and air filtration systems, have two key functions: to capture by absorbing, extracting or filtering contaminants – and then eliminate them.

Air scrubbers purify air streams in enclosed spaces, targeting chemicals, gases and particles, working either through dry scrubbing or wet scrubbing. Dry scrubbers collect chemicals and particulates through a dry reagent flushed through filters. Wet scrubbers collect contaminants



Photos: Anguil Environmental Systems.

A concentrator can take exhaust streams at or near ambient temperatures and concentrate them so that the airflow actually sent to the oxidizer is reduced by a factor of 8 to 20.

inside liquid droplets, then clean them either in a saturation pool or break them up in a liquid spray. Filters can also be used to boost efficiency before and after the initial cleaning. Also known as demisters or mist eliminators, mist collectors are made to specifically target mists and vapors within an air stream, such as smoke, coolant, oil, abrasives, and water.

Electrostatic precipitators work through ionization. Particulates in the air are electrically charged to stick to oppositely charged metal collection plates. They are then vibrated and rinsed into a bin for disposal or recycling.

Oxidizers clean by heating air that has been forced into a main chamber with a catalyst, until the contaminants within it either burn or undergo a chemical reaction, and then convert into less harmful byproducts that can be filtered further or disposed. Oxidizers are occasionally small enough for use in automotive exhaust systems, however, they are usually very large and used only with high-emission industries.

Air filtration systems trap a wide range of pollutants and other impurities in filters. They may aim to capture, dissolve or destroy pollutants like dust, metallic powder, gases, and chemicals. Air filtration systems are used in a wide variety of applications; they may be designed with any number of porosity, flow rate, filter length, pressure drop, and ply and efficiency requirements in mind.

In the anodizing bath, sulfuric acid fumes are released. Local exhaust ventilation removes the fumes at the source point and a scrubber provides additional cleaning before release into the atmosphere. The concentration in the

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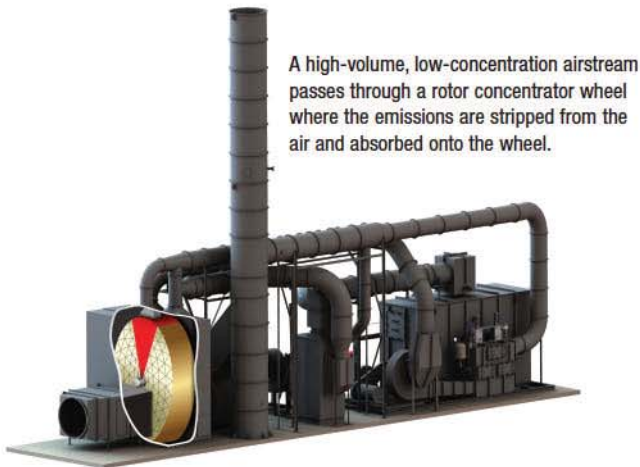
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AIR POLLUTION CONTROL EQUIPMENT



electrolyte bath may be only 10 to 20 percent, but long-term exposure can cause health problems if precautions are not taken. In the atmosphere, released sulfuric acid subsequently falls back to the ground as acid rain. The U.S. Clean Air Act regulates the release of sulfuric acid into the atmosphere, not only controls its release, but also record keeping and reporting.

It's also an issue with electroplating operations where surface preparation, surface treatment, and post-plating treatment can release harmful pollutants and VOCs into the air, and gases like cyanide. Plating processes generate heavy metals such as hexavalent chromium and cadmium. While national and local regulations limit the amount of emissions from electroplating shops, dangerous releases of toxic air pollutants can occur if an electroplating operation is not in compliance with regulations.

Among the range of air pollution control devices offered by Anguil, by the far the more sought after is its Regenerative Thermal Oxidizer (RTO) which destroys HAPs, VOCs and odorous emissions through the process of high temperature thermal oxidation, using a mix of temperature, residence time, turbulence, and oxygen to convert pollutants into carbon dioxide and water vapor. The company says that what makes the RTO the most widely used emission abatement technology is its ability to repurpose the thermal energy generated during operation to reduce operating costs and energy consumption of the system itself.

Oxidization is not a new technology, it's been around for over 30 years, but has evolved in efficiency from 95 percent in the 1990s to now routinely removing almost all contaminants.

VOC and HAP laden process gas is either pushed or pulled into the inlet manifold of the oxidizer via a system fan. Flow control or poppet valves then direct this gas into energy recovery chambers where it is preheated. The process gas and contaminants are progressively heated in the ceramic media beds as they move toward the combustion chamber.

Once oxidized in the combustion chamber, the hot, purified air releases thermal energy as it passes through the



When coupled with a concentrator, oxidizers can operate with very little additional natural gas consumption due to the rich stream of emissions.

media bed in the outlet flow direction. The outlet bed is heated and the gas is cooled so that the outlet gas temperature is only slightly higher than the process inlet temperature. Poppet valves alternate the airflow direction into the media beds to maximize energy recovery within the oxidizer. The high energy recovery within these oxidizers reduces the auxiliary fuel requirement and saves operating cost.

Another supplier of thermal oxidizers is Ship and Shore Environmental of Signal Hill, CA. Its units can be used to create a heat exchange, or even to generate steam if needed. Technical Sales Manager Jim Kuzara says this can cut a plant's energy usage, contradicting the usual assumption that there is no cost reduction offered by environmental controls.

One of the most common systems it builds is the Regenerative Thermal Oxidizer. In this system, a fan supplies air from the process to the RTO. There are two heat exchanger beds in the system, with a burner and combination chamber between them.

"The RTO is ideal because it provides up to 99 percent destruction efficiency, but it's also thermally efficient," Kuzara says. "We can recover up to 97 percent of the energy in the system."

A fan pushes the air through an inlet manifold, which directs the air up into one of the two heat exchanger chambers, which have ceramic beds. The incoming air is pre-heated to between 900 and 1000 F prior to entering the combustion chamber (gas is then heated up to 1500 F). Exhaust gas from the combustion chamber is then directed through a second ceramic heat exchange bed where heat is stripped from the exhaust. The resulting clean process air is released to atmosphere as carbon dioxide and water vapor.

Despite already being one of the most regulated industries in North America, metal finishing operations have embraced their corporate social responsibility and are proactively pursuing new technologies and processes that contribute to cleaner air. ■

Development of a Zero-Emission Process for Chromium Electroplating Operations

BY DR. RAKESH GOVIND, DEPARTMENT OF CHEMICAL ENGINEERING, UNIVERSITY OF CINCINNATI AND PETER J. PAINE, P. J. PAINE & ASSOCIATES

Introduction

A major environmental issue associated with chromium electroplating is the release of hexavalent chromium (HVC) from the plating solution in the form of a mist which is produced by the surface impingement of air bubbles created during electroplating. Air sparging is used to maintain the plating solution temperature and also mix the chromic acid in the plating bath and sparging may contribute to releases of HVC.

This paper describes a unique liquid formulation that has been developed that spreads as a thin layer on the surface of the chromic acid plating solution to prevent the formation and emission of HVC aerosols and the transport of chromium/HVC into the environment. Experimental studies have been conducted with the liquid formulation to demonstrate the quality of the chromium plating, its non-adherence to plated parts, and its non-interference with the electroplating process.

Hard chromium plating from a solution of chromic acid is widely used in industry both in the US and Canada to improve the properties and wear characteristics of various metal substrates/parts. It is also used for decorative chromium plating (automotive and plumbing fixtures, for example).

The US EPA has identified hexavalent chromium as one of the 17 high-priority toxic chemicals and hexavalent chromium is a known human carcinogen^{1,2}. It has been classified by the EPA as a Group A carcinogen³.

Environment Canada and the Ontario Ministry of the Environment have also passed legislation on releases of chromium from chromium plating/anodizing operations.

Workplace exposure to Cr⁶⁺ has been associated with a number of sources: hard and decorative chromium plating, spray painting, stainless steel welding, leather tanning, and abrasive blasting operations. Inhalation is the major exposure pathway for Cr⁶⁺.

As part of the National Emission Standard for Hazardous Air Pollutants

(NESHAP), the US EPA set the regulatory limits at 0.015 mg/dscm and 0.03 mg/dscm for stack concentrations for large and small hard chromium electroplating facilities, respectively. In 2011, the US EPA further reduced the regulatory limits for hexavalent chromium for large and small hard chromium platers and also requires that any "new chromium plater" in the US meet a limit of 0.006 mg/dscm.

OSHA regulations require a Personal Exposure Limit (PEL) of 100 ug/m³ and a proposed exposure limit of 0.5 ug/m³ for hexavalent chromium. NIOSH REL (10 hr TWA) is 1mg/m³ for all hexavalent chromium compounds. OSHA revised the PEL to an 8 hr TWA for hexavalent chromium to 0.5 ug/m³ with an action level of 0.25 ug/m³.

Maintaining the temperature of the plating solution and ensuring adequate solution mixing are essential for successful electroplating. Part rejection rates increase due to non-uniformity in plating bath temperature and this also increases waste generation and energy consumption as parts have to be re-plated. Traditionally, temperature control and mixing have been achieved by bubbling air at the

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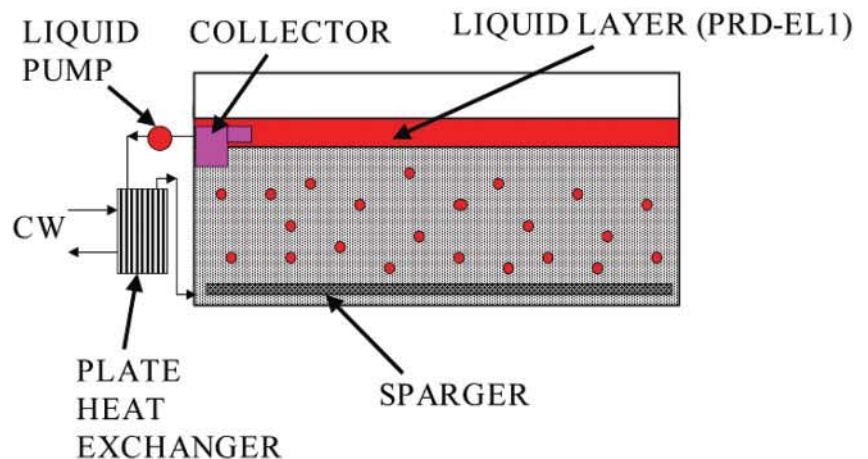


Figure 1: Schematic of the Zero-Emission Process using a Liquid Layer to Eliminate Aerosol Emissions.

Mixing and heat transfer are achieved by sparging this fluid at the bottom of the plating bath. The liquid is physiologically inert, non-volatile, immiscible with the chromic acid solution, electrically non-conductive, and possesses a density less than water.



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Progalvano was founded in 1967 as a manufacturer of chemical products and electroplating processes. In the 1970s, however, it decided to specialize in the manufacture of electroplating equipment. In 1980, Progalvano's core business evolved further, focusing on the production of plating barrels and accessories for the electroplating industry. At the start of the new Millennium, Progalvano's experiences expanded in new and significant areas. As a company with a global reach, it now has a presence in major markets worldwide, and exports to more than 50 countries, including emerging markets and Southeast Asia.

Progalvano has put all its efforts into technological research, increasingly focusing on machinery automation and forging partnerships with electronics and industrial automation companies. Progalvano is an outstanding example of a made-in-Italy firm, as it is able to work in a creative, original and flexible manner and adapt to different market conditions. This enables the company to come up with technological solutions to any customers' production problems. Indeed, our partnership with research institutes, universities and technical companies forms

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CHROMIUM PLATING

bottom of the plating bath using an air sparger. However, when air bubbles from sparging together with hydrogen and oxygen evolved at the electrodes break at the surface of the plating solution, they produce aerosols and mists which are responsible for HVC emissions (and the ensuing regulations).

The proposed Zero-Emission process (Figure 1) uses a fluid layer at the top of the plating solution to control the emissions. This fluid layer is immiscible with the chromium plating solution.

This proprietary liquid, named PRD-EL1, accomplishes the following in the proposed process:

- (1) Mixes the plating solution to minimize concentration polarization at the electrodes and concentration gradients within the bath;
- (2) Eliminates the breakage of bubbles at the liquid surface (which create the liquid aerosols responsible for air emission of hexavalent chromium in the conventional process);
- (3) Prevents deposition of particulate matter on the plating surface;
- (4) Maintains solution temperature by removing excess heat generated in the bath due to resistive heat losses;
- (5) Prevents solution evaporation; and
- (6) Eliminates the need for air sparging (which requires expensive air handling equipment and generates liquid waste when the vented air is scrubbed to reduce chromium stack emissions to comply with regulations).

Alternative Emission Control Technologies

Pollution control devices for chromium plating facilities can be divided into two categories: Add-on air pollution control devices and Chemical fume suppressants.

Add-on air pollution control devices are installed in the ventilation system and are designed to capture and remove plating emissions once they have been released from the plating bath.

Examples of add-on air pollution control devices used for chromium plating are: Composite Mesh Pad (CMP) systems and Packed Bed Scrubbers (PBS). These control devices are capable of meeting the EPA and Environment Canada regulatory limits for hexavalent chromium. These control devices are designed according to ACGIH ventilation rates for chromium plating (or anodizing) tanks, CMP systems are able to meet the new 2011 EPA limit for HVC and easily meet the EC limits for HVC.

CMP and PBS devices, however, are expensive to

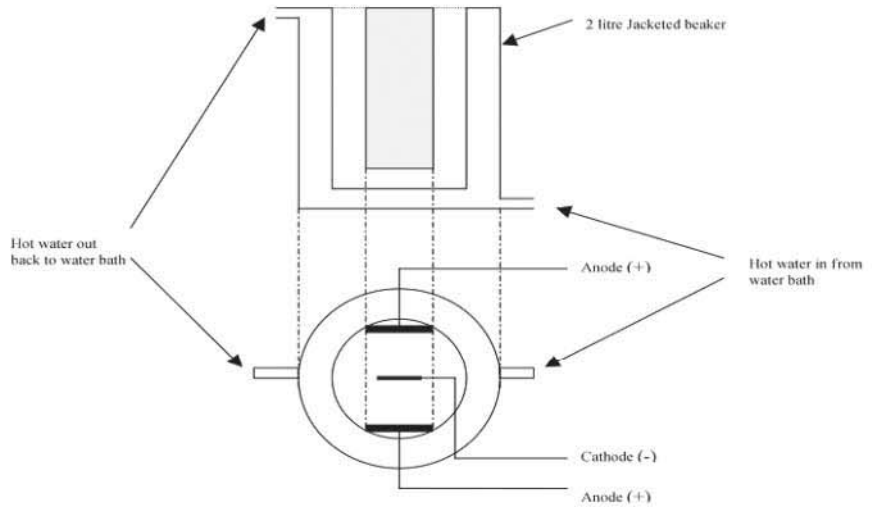


Figure 2: Bench-Scale System to test the Zero-Emission Electroplating Process. Parts with three levels of plating difficulty were designed:
Type A – easiest to plate (and shown in Figure 2)
Type B – moderate difficulty in plating
Type C – difficult to plate

purchase, operate and maintain, and can substitute one pollution problem (air) for another (contaminated water discharge or hazardous waste generation). The need for ventilation duct work and the requirement of a final discharge stack increases the cost of the system (as in Canada there is a stack test requirement on an ongoing five-year basis for compliance). Also, the shop's ability to utilize all available interior space may be impacted due to duct work placement.

Chemical fume suppressants (CFS) are widely used in both hard and decorative chromium plating. Chemical fume suppressants use wetting agents or foam blankets, or a combination of both. CFS are stable surface-active agents which reduce emissions of chromic acid by lowering the surface tension of the plating solution to the regulated limits of surface tension. The use of stable surface active agents as fume-suppressants is an easy and very cost effective way to reduce the environmental and workplace safety hazards associated with misting.

Surface active agents can sometimes lead to the formation of a foam blanket on top of the bath which can trap hydrogen and become a potential workplace hazard in the presence of sparking from poor bus-bar-to-rack connections. Other causes of concern are that these foam blankets accumulate dirt and grease which can stick to the part during placement into the tank and thereby cause pitting. However, the main cause of concern with CFS was the use of PFOS in their chemistry which resulted (in the last five or so years) in regulatory agencies in Canada, the US and the EU to ban PFOS chemistry. Fume suppressants are now produced in the US and Canada with "non-PFOS" chemistry.

Experimental Testing of the Zero Emission Process

Figure 2 shows the bench scale experimental setup designed to evaluate the zero-emission process. A 2-liter Kimble jacketed beaker was used as the experimental

Dynamix is the largest Canadian-owned manufacturer and supplier of metal finishing chemistry, supplying automotive, aerospace, RoHS, ELV, WEEE and REACH compliant metal finishing products across North America. Partners Dennis Rogers, Charles Morris and Stewart Tymchuk established Dynamix in 2007 and over the years the business has grown and adapted to the needs of industry. Together they share more than 75 years of metal finishing experience in real-world plating facilities, which provides customers with a tremendous operational advantage. The founders' combined knowledge of technical service, research and development, manufacturing, ISO 9001:2015, marketing and sales, enables Dynamix to provide high quality products and cost-effective opportunities to all customers.

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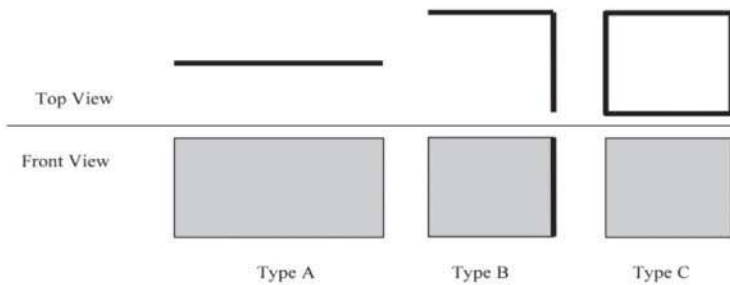


Figure 3: shows the three types of parts which were plated in the bench-scale process.

Figure 3 The types of parts (A, B, C) which were plated during Bench-Scale Testing.

Type A has both sides of the flat sheet accessible by the electrodes. Type B has a common edge, which is a discontinuity. Type C has an interior surface that had to be plated.

tank, connected to a water bath to maintain constant temperature in the beaker. The cathode (i.e. the part to be plated) and the anodes were connected to a power supply capable of delivering up to 30 Amps current at 8Volts. The liquid layer (PRD – EL1) was applied to the top of the solution

Results and Discussion

Tests were conducted to evaluate the quality of hard chromium plating obtained using the conventional and the zero-emission process. Parts of varying degree of difficulty of plating were plated and compared. OSHA Method ID 215 analysis was used for the detection of Cr (VI) in the workplace environment. The quality of the finish was compared based on two tests: Scratch Adhesion Test and Pit Counts.

Scratch Adhesion Tests

Scratch adhesion testing is performed on a coated sample to measure the critical load at which a coating shows signs of failure. The test can be performed with varying table speed, load rate, initial load and final load. The friction force is recorded and displayed during the scratch test.

The adhesion between the coating layer and the substrate and the critical force at which the coating fails were examined using a Sebastian V Scratch Tester (Quad Group, Spokane, WA). The coated sample is positioned underneath the diamond. Loading rates and speeds may be left at a default setting or can be fully defined by the user through the computer. The table-drive speed, rate of loading, initial load and final load are selected by the user.

The sample stage moves horizontally along with the sample at a predetermined scanning rate. An increasing normal load, starting at zero, is applied on the stylus (diamond tip with a 533 m in radius) at a predetermined loading rate. Each sample was scratched three times. Computer logged-data obtained from the scratch test include applied load, transverse force, friction coefficient, and acoustic emission signal, which is detected by a piezo-

electric acoustic transducer mounted on the stylus arm. The acoustic noise generated during the scratch test is recorded in order to identify the critical force. A burst in the acoustic signal indicates either debonding or cracking of the coatings.

The scratch tracks on the films were examined by using an optical microscope. During the scratch test, the scan and loading rates were maintained at 0.04 cm sec⁻¹ and at 0.03 kg sec⁻¹, respectively. The maximum load and travel distance were fixed at 4 kg and at 3 cm, respectively.

Editor's Note: Results of the Scratch Adhesion and Pit Count tests are available. However, due to space limitations in this edition of CFCM, not all graphical representations of both test results were able to be included. Therefore, due to this space restriction, CFCM decided in conjunction with the authors to include test results for Critical Load only. This is shown in Figures 4 to 6 for part types A, B and C. Readers wishing to obtain copies of all testing may contact the authors.

Apart from experimental scatter, there was no difference observed in the critical load, transverse force and friction coefficient of the parts plated using the conventional process and those parts plated with the zero-emission process.

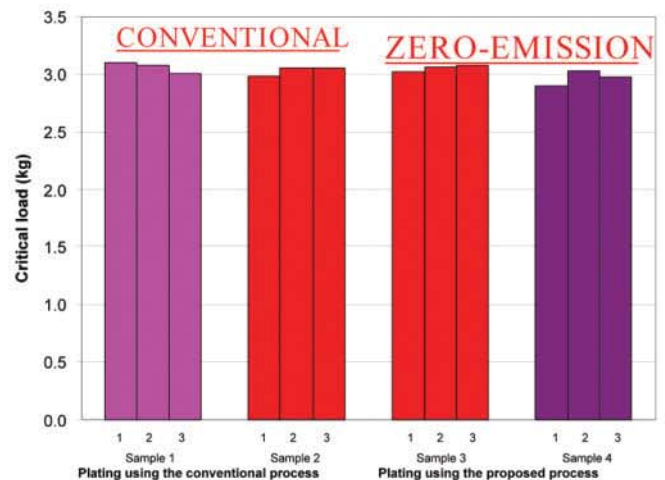


Figure 4: Critical Load (kg) for Type A part using the conventional and Zero-Emission Plating Process

Pit Counting Analysis

Pit count is a count of the number of pits on the surface of the part per unit area. The pit count measurements were made using SEM scans of the surface. S4000 Field Emission Gun (FEG) Scanning Electron Microscope (SEM) manufactured by JOEL Inc. was used to obtain the surface scans of the Cr (VI) coated parts. It has a resolution of 20 Å and is equipped with an Oxford Isis Energy Dispersive Spectroscopy system including a light element detector

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The advertisement features a central image of laboratory glassware and various chemical products. On the left, two Erlenmeyer flasks contain liquids, one green and one red. In the foreground, there are several piles of powders in different colors: red, green, blue, and white. To the right, there is a large pile of metal discs or anodes. The background is a light blue gradient.

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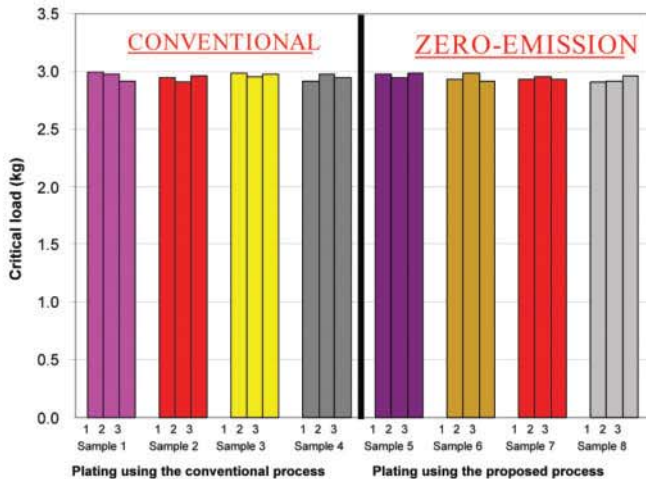


Figure 5: Critical Load (kg) for Type B part using the conventional and Zero-Emission Plating Process.

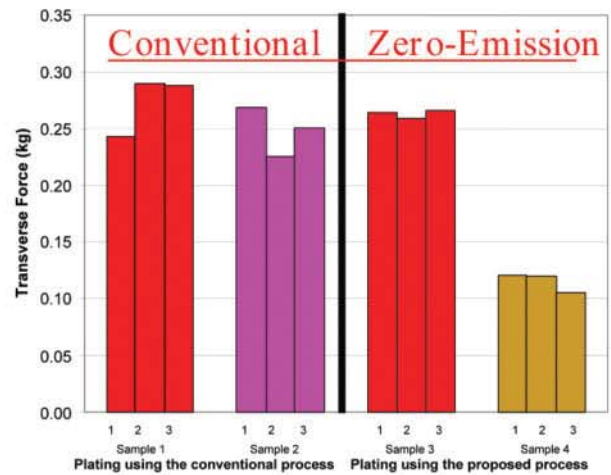


Figure 6: Critical Load (kg) for Type C part using the conventional and Zero-Emission Plating Process.

and digital imaging, an Oxford Solid-State BSE detector and an Oxford Opal Backscattered Diffraction Pattern System for crystallographic analysis.

The plated surface was scanned down to 0.1 μm resolution at 30,000 times magnification. The surface scans showed no sign of pit formation on the surface.

Emission Analysis

The Zero-Emission Process did not produce any aerosol emissions of hexavalent chromium, as measured by the OSHA method. All filters had non-detectable levels of hexavalent chromium.

Conclusions

A Zero-Emission Plating Process has been developed and tested. This process involves the use of a specially formulated and proprietary liquid layer on the liquid surface of the electroplating tank. The liquid is recycled to provide mixing of the liquid in the tank and is cooled using an external heat exchanger to maintain the tank temperature. The liquid droplets provide mixing of the liquid in the tank, prevent deposition of particulates on the plating surface and minimize the effect of concentration polarization at the electrodes.

The main benefits of the zero-emission process are:

- (1) Zero emission of liquid aerosols which are primarily responsible for the emission of hexavalent chromium from electroplating tanks
- (2) Prevents corrosion by the chromic acid at the tank-liner interface
- (3) Prevents accumulation of hydrogen gas, as in the case of foam blankets
- (4) Improved temperature control which results in a better plating quality
- (5) No evaporation of water from the tank, when no electroplating is being conducted, thereby preventing the addition of make-up water

- (6) Achievement of a plating quality which is as good as plating with the conventional plating process, based on the scratch test and pit counts on the surface.

The Zero-Emission Process system can be easily retrofitted to any electroplating tank. This process results in considerable savings in investment cost since no air ventilation system is required and also lowers the plant operating costs due to reduced space heating and make up air requirements especially in winter in cold climate locations. This fact alone can lead to significant energy savings for chromium and other platers. ■

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De Nora Tech is a global leader in the development, manufacturing and sales of mixed metal oxide anodes for electrochemical plating processes. De Nora Tech (DNT) provides support to its customers by providing high-level, on-time electrode delivery, ISO 9001-2015 product consistency, and proven superior plating performance. DNT supports customers' commercial needs by delivering specialized technical product assistance.

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De Nora Tech is part of the worldwide De Nora Network operating 12 manufacturing facilities across the globe with De Nora's corporate headquarters located in Milan, Italy. With more than 95 years in business, De Nora aims to strengthen its position as the world's leading provider of electrochemical products and services by uniting a unique value proposition of economic success, respect for the environment, and social responsibility.

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Photoinitiator Supply Shortage

Causes Headaches for Inks and Coatings Industry

MANUFACTURERS ARE WEATHERING the storm caused by a supply shortage of photoinitiators for inks and coatings used globally across many industries. Photoinitiators are compounds that produce radicals when exposed to UV light. These then react with monomers or oligomers to initiate polymer chain growth. They are essential ingredients of all UV-curable adhesives and inks, as well as automotive and wood coatings, and flooring.

Only a few companies in China produce the precursor needed for a commonly used photoinitiator, TPO (trimethylbenzoyl phosphine oxide).

According to the European Printing Inks Association (EuPIA), last spring many suppliers in China either ceased or reduced production of this common chemical compound as a result of government-led environmental assessments; one of the major producers had even been shut down. To aggravate the situation, photoinitiator supply had been impacted by explosions, fire, low inventory levels, unplanned turnarounds, and various production outages.

And while companies like Jiangsu Juming and Guangzhou Yuer currently promise to deliver TPO, by the end of last year, members of RadTech, the association for ultraviolet and electron beam processing, suggested the supply shortage still posed challenges, but remained optimistic it would be resolved.

"The biggest challenge we're facing in the UV/EB marketplace is the global shortage of photoinitiators," said Tony Renzi, from Sun Chemical, a member of RadTech. He suggested that to manage materials effectively, inks formulated with alternative materials at short notice might be an option.

Industry players are doing everything possible to avoid supply disruptions and are putting forward other solutions like those suggested by Renzi.

Allnex, a global producer of resins for industrial coatings are offering approaches such as LED boosters, self-curing resins and polymeric benzophenone photoinitiators which can either diminish or replace the need for photoinitiators.

Phoseon, an LED curing solutions supplier, continues to vary its wavelengths technology in terms of what the market may need to lower the amount of photoinitiators required or increase the performance of the lamp to compensate for the lower concentration of those chemicals.

Sun Chemical stated in a subsequent announcement that it would "continue to secure all volume available in the market as well as continue to work on qualifying suitable alternative materials. To manage materials effectively, it will continue to be necessary to offer inks formulated with alternative materials at short notice."

By last July, the EuPIA announced that ongoing inspec-

tions regarding compliance with Chinese environmental regulations were causing further delays. It added that the situation was leading to increasing costs for remaining photoinitiator materials significantly.

"Over the last few years the global geopolitical situation has undergone a number of changes, including a shift from attempts to reduce trade barriers to ideas about increasing trade barriers," it stated. EuPIA says the situation was exacerbated by the need for its members to meet compliance with the REACH policy. In accordance with this Policy, EuPIA members are committed to make every effort to substitute such materials with less hazardous ones. Some raw material suppliers chose either not to register some raw materials or to register them only for low volume usage resulting in fewer choices that ink manufacturers have when substituting photoinitiators for materials.

In December 2018, Siegwirk, a major international supplier of printing inks for packaging applications and labels, announced it would implement a price increase for all packaging inks and varnishes in EMEA beginning February 1, 2019. Siegwirk says the costs for raw material categories, such as photoinitiators, UV monomers, acrylic resins, pigments, isocyanates and specialty additives has been rising and colored pigments and photoinitiators, especially, are expected to remain highly affected by "the drastic supply disruptions amid stricter environmental regulations in key supply markets."

Siegwerk says it has already worked closely with the overall supply chain to leverage its buying power and minimize costs whenever possible. "In order to ensure that customers benefit from continued high levels of quality, service and consistency, Siegwirk now needs to pass on these higher costs," says Dr. Jan Breitkopf, President Packaging EMEA. Despite the company's best efforts to reduce costs, there is a clear indication that prices will both start and remain at noticeably higher levels through 2019.

Huber Group also announced price increases for all energy curing inks and varnishes across the Americas and Europe. Citing the same severe shortage of key raw materials for these products and the impact on raw material costs, price adjustments will range from 6 per cent to 8 per cent, it said.

EuPIA suggests the supply shortage is expected to persist for a longer period of time. It sees all its member companies highly engaged to safeguard supply for their customer bases, searching for alternatives whilst encouraging their suppliers to develop as broad and diverse a supply base as possible, provided that safe use can be demonstrated by adequate risk assessment. ■



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PIGMENT DISPERSIONS can provide an easy route to deliver color into a paint or coating product, aiding stability and compatibility for processing and application, while UV curing, a process involving high irradiance ultraviolet light of a specific wavelength, is used to instantly dry and cure those inks, coatings or adhesives.

When UV light produces the photochemical reaction to cure paints and other coatings, the process is much quicker and more efficient than with traditional baking or drying methods. UV paint curing systems also offer significant energy savings without producing any hazardous byproducts as with water and solvent-based thermal drying methods which not only take time but create polluting emissions, says LightSources, designers and manufacturers in the specialty lamp manufacturing industry.

First introduced in the 1960s, UV lamps have rapidly gained acceptance by a diverse range of industries and are now the preferred choice of many OEMs across the globe, says LightSources. With UV light systems' instant curing, manufacturers report higher production rates, better bond-

ing, no loss of volume and less likelihood of product damage as with slower drying methods. Along with being environmentally friendly, UV lamps are also easy to operate and maintain.

According to a paper produced by Emerald Performance Materials for Radtech, the industry association promoting UV and EB technology, achieving the right balance of light fastness and durability in a pigment – while making sure that these beneficial properties do not interfere with through-cure, adhesion and other properties – can be a challenge. The right UV dispersion is a factor.

Dispersion occurs when a dry powder substance (or pigment) is mixed with a liquid such that all the individual molecules and particles of the dry powder become separated from each other and are evenly distributed and completely mixed in the liquid medium, says coatings maker, Lubrizol.

More efficient dispersion equals increased productivity, higher pigment/filler loadings, increased color strength, lower energy usage, and upgraded performance.



Founded in 1977 and headquartered in Mississauga, ON, Lorama Group Inc. is both a manufacturer of Colour Dispersions and an international distributor of Specialty Additives. Through our entrepreneurial spirit and focus on sustainability, Lorama has grown to service the CASE market with both manufactured and distributed raw materials. Since our founding days, we have grown to reach more than 90 countries with expertise in global regulatory and raw material markets.

Having in-depth technical expertise and the ability to fully deconstruct and rebuild formulations, Lorama is known worldwide for our knowledge in paint formulation. In addition to having six global labs, our main laboratory powerhouse is situated in Mississauga, housing our R&D, technical services and colour services group. Customers rely upon our 40 full-time chemists for commercially proven solutions through our wholistic consultative

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Improved product quality is a result of stronger, brighter colors; higher gloss; better flocculation resistance; improved stability, uniform flow and improved leveling, and meeting new environmental standards.

Dispersion stability is optimized when the functional anchor group of the dispersant is matched to the surface of the pigment or particle. For acid to neutral surfaces, and particularly in situations where organic pigments are used, a dispersant with basic functionality or strong hydrogen bonding potential is most effective. For basic surfaces, and particularly in situations where organic pigments are used, an acidic functional dispersant is preferred.

Lubrizol manufactures Solsperse hyperdispersant technology, or what it refers to as “an essential ingredient for advanced performance in paint, coating and graphic art formulations.” The technology, says the company, enables the production of highly loaded, highly stable, broadly compatible dispersions in almost any combination of solid particles and continuous phases (liquid or solid).

“This dispersant technology combines polymeric stabilizing chains selected for solubility in a given solvent and/or resin combination,” the company says, “with anchor groups optimized for strong adsorption to the particle surface, where the dosage is determined by the particle’s surface area. This technology allows the production of sterically stabilized dispersions with higher solids content, lower viscosity, and improved viscosity and particle size stability compared to dispersions made using resins or lower molecular weight dispersants or surfactants.” The Solsperse 5000S Synergist line is UV-curable.

Alberdingk Boley makes solvent-free UV-curable dispersions – its LUX line of products – which are radiation-curing, aqueous polyurethane and acrylate dispersions. The products allow customers to make industrial coatings that exhibit high resistance right after curing, and contain very low concentrations of volatile substances.

With so many new materials emerging, coating systems have to be constantly adjusted to yield best results. Alberdingk Boley manufactures a full range of compatible copolymers, pure polyurethanes and acrylates that can be flexibly mixed with one another for any application including furniture, parquetry, panels, window frames, plastic, glass, paper, metal, cork, and leather. The company says delustering is easy, adhesion is improved by low volume shrinkage, and physical drying also enables reliable coating of complex three-dimensional surfaces prior to UV curing.

Chemical supplier Covestro agrees UV-cured coatings are the popular choice for industrial applications, adding, coatings systems based on UV-curing polyurethane dispersions (PUDs) are experiencing a rapid growth in popularity due to their fast processing, outstanding property profile and sustainability.

“UV-cure coating systems is one of the fastest growing segments in the coatings industry, especially for industrial applications where fast processing of coated parts is essential for high productivity,” the company says.

Covestro offers a wide range of UV waterborne polyurethane raw materials for a broad scope of applications. Bayer’s UV waterborne technology, which Covestro uses, requires low-to-no solvents, emits fewer VOCs, and offers comparable properties to solventborne PU coatings. UV waterborne coatings can be applied with current application equipment typically used for conventional coatings. This has contributed to the systems’ strong growth in the marketplace. As a supplier of Bayhydrol UV dispersions for UV-curing systems, Covestro assists customers with formulation development and testing, which is performed in its application labs.

According to the Radtech paper, “dispersions used in UV curing have a unique set of challenges for both the choice of pigment and the vehicle, or matrix of oligomers and monomers. Either transparent or opaque pigments may be chosen for UV-curable applications. Two central factors come into play: (1) the pigment must be lightfast/durable and not fade due to photooxidation from the UV exposure; and (2) the pigment must not absorb the UV light such that the UV light would not be transmitted and available to adequately cure the resin matrix. For this same reason, the more opaque the pigment is, the more difficult it tends to be to cure, and adjustments to the photoinitiator packages can be made to overcome variations in lamp irradiance and can further be adjusted by the use of higher functioning oligomers.”

UV dispersions differ from other types of dispersions with respect to the choice of vehicle and consideration of pigment, continues the paper. Like other dispersion types, in addition to the pigment and vehicle, there are stabilizers, dispersants, wetting aids and perhaps other additives. However, rather than an aqueous, alkyd, plasticizer or solvent vehicle, UV dispersions utilize oligomers and/or monomers as a vehicle for a 100 percent actives system, which will range from 30 to 75 percent colorant content depending upon the pigment. The coating or ink manufacturer then formulates the dispersion into a coating or ink, adding additional monomers, oligomers and photoinitiators, all of which are designed to cure upon exposure to a certain wavelength and irradiance of UV light in their process. It is important that the ingredients in the additive package in the dispersion react into the final cured film to achieve the desired physical properties and expected benefits associated with a fully cured product.

Pigment dispersion selection is critical to the success of a UV-cured paint or coating. Collaborating with your chemicals manufacturer will help successfully solve your challenges in a safer, cost-effective, high-performing product. ■

Company Description

Chromaflo Technologies is one of the largest independent global suppliers of colorant systems, chemical and pigment dispersions serving customers in the architectural and industrial markets as well as thermoset composites market. Headquartered in Ashtabula, Ohio, Chromaflo has production, sales, and technical support in many countries around the globe including Brampton, ON. At Chromaflo, each colorant and dispersion are a solution to our customers' most complex color and appearance challenges, created by applying the right blend of skill and craftsmanship. When the art and science of color is mixed with diverse technical skills and custom manufacturing capabilities, the possibilities are endless. This is Where Art Meets Technology

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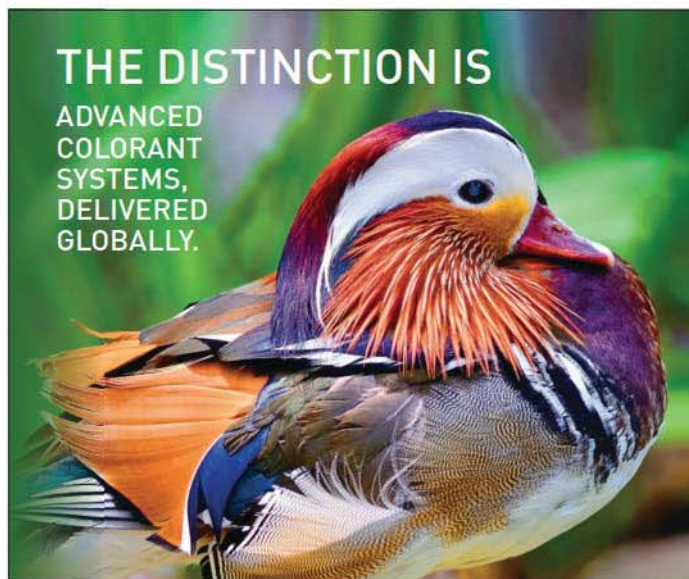
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The Ties that **BIND**

THE FACT THAT LIQUID PAINTS adhere to so many substrates can mask the chemistry that is needed to achieve this. Many surfaces are in fact resistant to liquids, or offer poor bonding characteristics, and paint manufacturers need to include an additive, or a complex of additives, that overcome the difficulties.

Despite years of research, there is no single technical description that describes adhesion, although several basic mechanisms are said to combine in defining it. The three primary ones are adsorption, chemical locking and mechanical interlocking. Using these concepts as a basis for comprehending a paint system, paint developers look to the paint film itself; the interface between the film and the substrate; and the substrate itself.

Both cohesion and adhesion are needed to produce a long-lasting, protective coating. Cohesion is the inner strength of a material, determined by the strength of molecular forces in the recipe. Adhesion refers to the strength of the bonds between one material and another.

An adhesive failure might be a blister forming at the interface, a lifting of the paint film, or another situation stemming from low adhesion at the interface. A cohesive failure is usually something that happens in the paint film itself, such as cracking, abrasion or solvent attack, although in some cases it also refers to a failure in the substrate, such as delamination or separation of grain or fibers.

Paint systems using reactive functional groups, such as hydroxyls or carbonyls, bond more tenaciously to substrates containing similar groups. Hydroxyl bonding is one reason why epoxy and polyurethane base polymers are often used in structural paint formulations.

But adhesion promoters or coupling agents are the most widely used chemical bonding additives in paint. They provide what is often termed “a molecular bridge” between the substrate and the molecules in the paint film. One end of the adhesion promoter molecule has functionality that reacts with the paint, and the other end has a functionality that reacts with the substrate. A strong and durable bond forms as the adhesive cures.

Organosilanes are among the most widely used adhesion promoters. In addition to acting as additives in paint formulations, they are also employed as primers on glass and metal substrates to promote adhesion, improve moisture resistance, and reduce the potential for corrosion at the interface.

BYK USA, which offers its BYK 4510 adhesion promoter, says that after application, this adhesion promoter orientates on the substrate/coating interface, and develops

bonds both on the substrate as well as on the coating matrix. Ideally, a permanent covalent bond is created here, which significantly increases the adhesion of the coating to the substrate, thereby increasing its performance.

BYK 4510 is a solution of a hydroxy-functional copolymer with acidic groups. It is offered for both solvent-borne and aqueous systems on metallic substrates and glass.

“The acidic groups of the silicone-free adhesion promoter cause a strong affinity, particularly to metallic substrates,” the company says, “and improve adhesion on steel, galvanized steel, aluminum, non-ferrous metals, and even glass. BYK-4510 reacts with melamine resins and polyisocyanates and is thus incorporated into the polymer matrix. It is compatible with most binders and can therefore be applied universally.”

Depending on the system, the additive can also improve coating flexibility without reducing hardness. Additionally, it can reduce the settling of inorganic pigments and fillers. The additive is stable even at high baking temperatures (briefly up to 280 C) and does not cause yellowing.

The additive is added while being stirred continuously. In solvent-borne systems, it should be tested for compatibility beforehand in a non-pigmented formulation. Higher portions of polar solvents, such as alcohols and esters, reduce any possible turbidity.

For use in aqueous systems with less than five per cent co-solvent, prior neutralization of the additive is recommended. The suggested formulation is 65 per cent BYK-4510, with three per cent DMEA and 32 per cent water.

Brenntag offers a selection of silanes as adhesion promoters. For coatings and inks, the company says, they provide moisture-initiated crosslinking of resins, improved adhesion, chemical and corrosion resistance, weatherability, pigment dispersion and scrub resistance.

“Once attached to a polymer backbone, silanes can link polymer molecules together via the formation of siloxane bonds, creating a three-dimensional network,” Brenntag explains. “This crosslinking is activated by ambient moisture and can take place at ambient temperature. Silanes can provide improved thermal stability, creep resistance, hardness and chemical resistance to coatings, adhesives and sealants.”

They specially provide improved substrate adhesion in adhesives, sealants and coatings under hot and humid conditions. They are commonly used to improve adhesion to glass and metals, but they can also be beneficial with difficult substrates like polyamide, SMC (sheet molding

compound), acrylics, PVC and others.

"Silanes can couple inorganic pigments and fillers to organic resins," Brenntag says." Coupling typically improves the moisture and chemical resistance of the coating or adhesive." Additionally, they can aid "in the dispersion of inorganic pigments and fillers in coatings and sealants. This can lead to lower viscosity in the formulated product and can improve the hiding power of a coating."

Eastman offers a range of chlorinated polyolefins (CPOs) that can serve as adhesion promoters in at least three ways: as a primer between the substrate and subsequent coatings; as a primer or tie coat between coatings layers; and as an additive to the paint or ink. These CPOs are particularly useful in painting on plastics such as untreated polyethylene, polypropylene, or other TPOs (thermoplastic olefins).

"With Eastman CPO dispersions," the company says, "it is possible to apply an adhesion-promoting primer from a waterborne system or to promote adhesion of a waterborne coating through use as an additive. Eastman CPO dispersions are useful as the base resin in adhesion-promoting primers and as an additive by being added directly to waterborne coating formulations to improve adhesion to polypropylene-based substrates."

The company also offers non-chlorinated adhesion promoters that provide adhesion to TPO and polypropylene substrates. Eastman adhesion promoter 550-1, supplied at 25 per cent weight solids in either Aromatic 100 or xylene, exhibits excellent gasoline resistance under a variety of polyurethane (2K) and melamine-cured systems.

In addition, formulators can now select a waterborne adhesion promoter, Eastman Advantis 510W, that is chlorine free and AEPO (acrylated epoxidized palm oil) free. Used as a blend-in additive for waterborne primers and/or base coats, this product enables the development of VOC-com-

pliant coatings for adhesion of coatings to modified polypropylene substrates.

The Lupasol polyethylenimine range, from the BASF stable of products, consists of adhesion promoters and compatibilizers used for plastic adhesion, barrier coatings, tie-bonds and lamination adhesives, as well as for imparting paintability. Their high charge density, BASF says, gives strong bonding on negatively charged surfaces, which can impart tie-layer adhesion, dye acceptance and paint adhesion as well as help in water treatment.

Lupasol FG is a multifunctional cationic polyethylenimine with a branched polymer structure. A selection of water-free and aqueous solu-

tions is also available from BASF.

Selecting adhesion promoters, as is always the case with additives, requires careful sifting of the claims and limitation of different products. There is no predicting in advance how a particular promoter might work in certain formulations; nor can you rule out the possibility that it could offer unsuspected advantages once it is included.

As always, paint and coatings manufacturers need to know their suppliers and their customers well. And they need to be able to support their customers through the trials phase, until the optimal product emerges and production can begin. ■

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Enhancing Compliance Mitigating Risk

BY GARY LEROUX

AS WE HEAD FURTHER INTO 2019, it is important to once again consider how we tackle the challenges before the coatings industry in Canada. The paint and coatings industry is certainly among the most heavily impacted when it comes to issues such as chemicals management with the ongoing assessment of more than 500 substances used in a wide range of product formulations, out of a total 1540 in Phase 3 of the Chemicals Management Plan (CMP). That is just the CMP, there are other challenges on substances used for in-can and film preservation, key registered biocides under the PMRA. The federal government is now looking at chemicals management beyond 2020 and what that might mean for further regulations in the sector. The demand for data by the federal government will certainly not diminish, as they continue to gather relevant data to make informed assessments of the chemicals used in products. In that regard, CPCA and its members continue to lobby for reliance on strong evidence-based data for better regulatory outcomes for our industry.

Before looking at some of the ongoing challenges ahead, it is instructive to look at a few successes in 2018, which shows our sector can get positive outcomes when the industry is united and focused on the things that matter.

- **Positive Outcome for Important Biocides:** CPCA worked closely with members over the past year to secure reversal of a decision on restrictions of two key biocides CMIT/MIT. These were restored to their original use levels necessary for effectiveness in coatings formulations. We also provided new data gathered from members in support of a study provided by registrants, which could also see the ban lifted on another critical biocide preservative, OIT, before it comes into effect. If so it would preclude the need for increased costs for product reformulations in future. This would benefit both Canadian suppliers and manufacturers in Canada and prevent negative impacts on cross-border imports of products manufactured in the United States where they do not have the same restrictions for OIT. As such regulatory alignment is critical and we continue to work with the

Regulatory Cooperation Council on addressing this matter within the context of the new trade agreement. CPCA made a pre-budget submission in August raising this concern, which was reflected in one of the recommendations in the Parliamentary Committee on Finance Report (December 6) as follows: "Review the legislation under which the Pest Management Regulatory Agency (PMRA) operates to include consideration of the impacts of PMRA on the competitiveness of Canadian firms and provide additional resources for pesticide re-evaluations." All of this work lays the groundwork for a renewed lobby on this important issue in 2019, in concert with our colleagues at the American Coatings Association as it relates to cross-border alignment.

- **New Cluster Approach for Assessment of Biocides:** As part of the ongoing challenges related to biocides for paint, CPCA worked with officials and established a "cluster approach" for the scheduled re-evaluation of other important biocides used as in-can and film preservatives. This will ensure all relevant information is used in future decisions limiting the potential for further bans or use restrictions. The eight biocides in question for full attention by CPCA in the upcoming re-evaluation period for the coatings industry in 2019 are: folpet, dazomet, chlorothalonil, diodofon, ziram, sodium omadine, MMY, DMY. Before proposed decisions are reached in August 2019, CPCA plans to hold quarterly meetings with agency officials to monitor the entire re-evaluation process. This will ensure that the risk assessors are effectively using comprehensive industry data in their paint scenarios and are applying proper safety factors and assumptions in all cases. We do not want more decisions impacting our product formulations.
- **Secured Tariff Exemption on Steel:** The federal government countermeasures taken on U.S. tariffs for steel and aluminum would have negatively impacted paint cans and lids imported into Canada. The



industry was fortunate to get a tariff exemption that prevented increased cost of paint cans and lids sold in Canada, thereby preventing increased costs for manufacturers of 25 per cent for those materials. Some have estimated the total costs without the exemption would have been in the millions given that there are no suppliers in Canada.

- **Proposed Metro Vancouver Bylaw Amendment Halted:** In October CPCA was informed by officials in the City of Vancouver that Metro Vancouver would not be proceeding with the proposed air quality bylaw amendment to cancel an important active ingredient in auto refinishing paint. This was based on several interventions and submissions made by CPCA over the course of the past 18 months. This saved in the order of \$4 million for the 400 body shops impacted as a result of the decision and prevented increased costs and a negative image for the auto-refinishing sector. Moreover, it prevented a bad precedent being

set wherein municipal jurisdictions impose regulations that exceed existing federal regulations as would have been the case with the substance already having a VOC-exempt status federally.

- **Exempted from Proposed Regulatory Action on Acetone:** There were a number of detailed discussions with the Natural Resources Canada and CPCA, with the latter providing specific coatings industry insight on the extensive use of acetone in the sector. This included the role of acetone in reducing VOC emissions, as a VOC-exempt compound. The result was an exemption from the proposed amendment for paint and coatings. This would have led to increased administrative burden and costs for both manufacturers and retailers of acetone.
- **No Amendments to CEPA for Chemicals Management:** The federal government's response to the Parliamentary Committee recommendations announced in 2018



confirmed that the federal government would not proceed with amendments to CEPA on chemicals management in this session of Parliament. While this was part of a multi-industry lobby effort, CPCA was very active in making submissions and interventions over the course of last year and throughout 2017 with an outcome that will benefit the coatings sector as the most heavily impacted sector under the Chemicals Management Plan.

While there were successes this past year, as noted above, the level of data and input required to secure positive outcomes can be overwhelming for staff and members. An example of the level of data required with respect to chemicals management includes the government’s national survey on the MEKO Code of Practice coming in January, assessing the success of the Code agreed to by industry in 2014. Then there are two other ongoing mandatory CMP surveys on quaternary compounds and coal tars. The government will also be rolling up information gathering requirements related to 1,400 substances contained in multiple “inventory updates” for the federal Domestic Substances List.

At the same time a new microplastics survey will be launched to determine the level of use and potential exposure of microplastics in paint and coatings. Our members will also have to comply with a mandatory flame retardant survey to be completed in the New Year for the coatings industry. A survey was also initiated in 2018 on the one-liter exemption for VOCs in paints and stains in Canada. For this one, our members will need sufficient time to respond, as the type of information sought is not always readily available. CPCA also continued collecting data on three substances used in some adhesives and sealants products, which should be formally proposed for addition to Schedule I of CEPA and, if so, two of them (DP and

DBDPE) could be added to a long list of substances to be targeted in a proposed amendment to the Prohibition of Certain Toxic Regulations, 2012, such as PBDEs, HBCD, PFOS, PFOA, etc.

The federal government will also launch a national survey on VOC content in Architectural and Industrial Maintenance (AIM) paint products sold in Canada for comparison with VOC limits in effect in other North American jurisdictions. Other mandatory surveys under CEPA 1999 for the Chemicals Management Plan will be issued later in 2019 along with other reporting requirements scheduled for the year. There is little development to report with respect to the Federal VOC Agenda 2010-2020, which aims to cover seven industrial categories of products emitting substantial VOCs in Canada. While the current focus is on three major VOC emissions contributors (asphalt cutbacks and printing and portable fuel containers), there have been only limited discussions with federal officials to date regarding the remaining four categories: industrial adhesives and sealants, cars/vans/light truck/assembly coating/auto parts coatings, rubber product manufacturing and plastic parts coatings and aerosol coatings. CPCA continues to monitor this important development and will prepare to respond and inform members as required.

As usual, industry continues to comply with significant requirements, as they always have, to ensure continued production of sustainable and high-performance products for their customers. CPCA is gearing up to ensure members are fully informed and supported in gathering the data needed for more informed chemical assessment and ultimately better decisions based on science.

To help address these challenges CPCA has developed a comprehensive “Canada CoatingsHUB” for members to ensure they have all the tools needed to comply with regulatory requests such as those noted above and more. This new Hub is a robust and relevant platform to help members deal with the flood of data requests in a timely manner, all on a functional, digital platform. This will include a compliance calendar with all the dates noted to ensure targets are not missed and risk is mitigated. It will allow members to select priority issues on which they would like to receive updates and provide a searchable data base of relevant information for the coatings industry in Canada. Members can access and search the relevant data via their individual CoatingsHUB dashboard, when and how they wish to. This new digital communications platform was custom-designed for the coatings industry and the first of its kind for more effective association management. ■

Gary LeRoux is President & CEO, Canadian Paint and Coatings Association.

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for flange mounting to the customer's tank, and drive assemblies for mounting on bridge support for open top tanks. Conn and Company just needs the customer's requirements and will be happy to be of assistance.

Conn handles all worldwide sales from the home office in Warren, PA.

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CPCA Christmas Luncheon

The Canadian Paint and Coatings Association welcomed members to its annual Christmas luncheon and cocktail reception, in December, at the Toronto Airport Hilton Hotel & Suites. Following are a few photos from the festivities.







Brenntag, the global market leader in chemical distribution, covers all major markets with its extensive product and service portfolio. Headquartered in Mülheim an der Ruhr, Germany, the company operates a global network with more than 530 locations in 74 countries. In 2015, the company, which has a global workforce of more than 14,000 generated sales of EUR 10.3-billion (USD 11.5-billion).

Brenntag connects chemical manufacturers and chemical users. The company supports its customers and suppliers with tailor made distribution solutions for industrial and specialty chemicals. With over 10,000 products and a world-class supplier base, Brenntag offers one-stop shop solutions to around 170,000 customers. This includes specific application technology, an extensive technical support and value-added services such as just-in-time delivery, product mixing, formulation, repackaging, inventory management and drum return handling. Long-standing experience and local excellence in the individual countries characterize the global market leader for chemical distribution.



Brenntag purchases and stores large-scale quantities of industrial and specialty chemicals from various suppliers, repackages them into smaller quantities and provides a full-line portfolio of chemicals in less-than-truckload quantities as well as value-added services. This



Connecting**Chemistry**

includes specific application technology, an extensive technical support and value-added services such as just-in-time delivery, product mixing, formulation, repackaging, inventory management and drum return handling. Brenntag aims to be the partner of choice for our customers and suppliers with these products and services.

When we think of our business, we need to ask ourselves two questions: How can we help our business partners to succeed - today and in the future? What is the benefit for our partners working with us? Our strap line "Connecting-Chemistry" is the ultimate answer to both of these questions.

Brenntag strives to be the industry's most effective and preferred channel partner. Our industry and customer-focused approach to chemical distribution builds on connecting customers and suppliers in a winning partnership. Always being committed to our partners' success, we serve as their extension, sharing our intelligence on markets, industries and applications. We support them in reacting flexibly to ever-changing market conditions and help them focus on their core business by managing their complexity. We are the only chemical distributor, which complements a broad global network with outstanding local execution. Brenntag is there for its partners - anytime, anywhere.

Brenntag is truly a "people's business". Everything we achieve as a business is accomplished with and through our employees. They are the connection between our business partners. They connect people and build relationships. All in all, they connect chemistry on all levels.

We demonstrate that the distribution of chemicals and ingredients is not just a business for us. It is an attitude and our passion to be the best partner connecting you as our customers and suppliers in local markets worldwide.

Brenntag - Connecting**Chemistry**

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WORLD**



Globalization and ever more stringent regulation confront the manufacturing industry each year, presenting greater and greater challenges. Brenntag Canada recognizes that the specialty chemicals market does not have to be so complicated, however - we aim to make all aspects of chemical distribution less complex for our customers and suppliers.

Through a dedicated and experienced team of technical experts and sales agents, Brenntag Canada offers tailor-made solutions to each customer's individual needs and business challenges with a degree of professionalism that few of our competitors can match. From providing advice on improving formulations, to devising innovative supply-chain solutions, to sourcing specialty ingredients, Brenntag Canada delivers products and services which put our customers and suppliers a step ahead of the competition.

We at Brenntag demonstrate that the distribution of chemicals and ingredients is not just a business for us. It is an attitude. And our passion is to be the best partner connecting you as our customers and suppliers in local markets worldwide.

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SAMES KREMLIN Launches New Airspray Tanks



SAMES KREMLIN has launched a line of new airspray tanks called FPro featuring capacity from 2L to 50L, with maximum pressure from 3.5 Bar to 7.0 Bar. They are manufactured of aluminum, carbon steel or stainless steel; offer bottom or top output; and come with or without an agitator. All tanks are CE, ASME, and ATEX certified and the line features a new premium agitator.

The company says customers can expect higher transfer efficiency – up to 78 per cent on complex shaped parts. The units produce no blotching or mottling; offer a lightweight feel for comfort and easy application as well as a fatigue-free trigger; and have simplified design, for quick maintenance.

Target markets include kitchen and bath, furniture, civil aviation, aerospace, farming trailers, railway, defence, and metallic furniture.

www.sames-kremlin.com

Portable Spectrophotometer for Solid Colors

Uniform color is directly associated with high quality. The spectro2guide spectrophotometer from BYK-Gardner can measure color and 60-degree gloss simultaneously; but what's new is the quantification of fluorescence by its measuring like a fluorimeter with monochrome illuminations.

The combination of a spectrophotometer with a fluorimeter opens up completely new perspectives to control color quality and stability. Colorful graphs show the fluorescent results on the display, and new fluorescent indices are calculated for easy analysis.

The portable unit features: a large 3.5-inch color touchscreen; an icon-based menu with colorful data tables and graphics for intuitive smart phone-like operation; an integrated camera which shows a live preview of the measurement spot magnified by a factor of 4.5:1 to prevent false readings on imperfec-

tions; agreement between instruments allowing usage of digital standards among the supply chain; stable, long-term calibration needed only every three months; a 10-year warranty on the LED light source with no lamp changes needed; flexible data transfer via docking station, directly connected with USB cable or wireless with Wi-Fi function; and professional data documentation and analysis with smart-chart software.

www.gardco.com

Clariant Unveils Long-Lasting Magenta for Anodized Aluminum

Playing to fall color trends, Clariant has launched a durable magenta shade for coloring anodized aluminum. New Sanodye Magenta LF combines red, the color of power, with a touch of trustworthy blue in a non-bleeding single dye formulation that consistently delivers the same shade.

Thomas Heber, Technical Marketing Aluminum Europe, Business Unit Pigments at Clariant comments: "With magenta billed as the hottest hue for fashion and cosmetics for fall 2018, Clariant is very excited to offer aluminum finishers this striking shade with the uniquely long-lasting properties to give everything from jewelry, smartphone shells, lipstick cases and other cosmetics packaging, to home appliances, consumer electronics and patio furniture, a sophisticated on-trend look that will hold its vibrancy."

Clariant says Sanodye Magenta LF has a unique level of light and weather fastness for indoor and outdoor applications. The single dye formulation has a heavy-metal free dye structure, a key consideration in applications such as toys and consumer goods.

As a single dye formulation it has uniform high reproducibility, the company says, making it ideal for achieving a precise shade for color matching packaging, as with cosmetics.

www.clariant.com/aluminumfinishing

Lubrizol Introduces New Acrylic Copolymer Emulsion for Low VOC Direct-To-Metal Coatings

The Lubrizol Corp. has announced the commercial availability of its Carboset CR-3100 acrylic copolymer emulsion, designed to offer protective properties and adhesion to metal substrates in low VOC formulations. Carboset CR-3100 is a water-borne, styrene-acrylic

emulsion for direct-to-metal coatings.

With adhesion to a variety of metal surfaces and chemical- and corrosion-resistance, the polymer offers performance with a single coat in light and medium-duty industrial applications such as transportation finishes for heavy machinery and agricultural implements; truck and trailer components; commercial finishes for metal buildings and structural members; and industrial maintenance coatings for light and medium duty applications. It can be formulated to a range of glosses and a lasting finish.

"Carboset CR-3100 has the functional flexibility to perform in a variety of environments," says Nick Sterne, Market Manager, Lubrizol Performance Coatings. "In addition to providing great performance in low VOC formulations, this resin is APEO and formaldehyde-free to comply with strict regulations. Carboset CR-3100's performance as a single coat system can also enable more efficient application for end users."

www.lubrizol.com

Phascope Paint Probe Measures Coatings



The Phascope Paint is a probe in pen design which can be used to measure non-destructive coating thickness of non-conductive coating materials on steel or iron and on non-ferrous metals. It can be used for capturing measurements, and then the Phascope Paint app can offer viewing, analyzing and reporting data on a smart phone or tablet.

The measurements conform to standards DIN EN ISO 2360, ASTM D7091, DIN EN ISO 2178 and DIN EN ISO 21968.

The company says the product is ideal for on-site applications due to its small size, light weight, robustness, and durable probe

design. Other features include easy operation of the app on a smart phone or tablet.

Specimens' shape and permeability have a comparatively low influence on the measurement results. Conductivity compensation for measurements is offered on non-magnetic substrate materials, and the system is usable for measurements on both smooth and rough surfaces.

www.gardco.com

New Current Monitoring Pulsed DC Static Controller



The new 977CM - Current Monitoring Pulsed DC Static Controller brings together powerful long-range ionisation, closed-loop feedback, self-monitoring, and remote reporting for paint booths. Self-monitoring and adjustment of performance allows optimum control of static for much longer periods than previously possible. Local display and output signals alert operators when equipment needs to be cleaned.

Additional features include:

- Ion current monitoring and control; this maintains optimum performance for longer periods, by increasing voltage to 125 per cent of start voltage (i.e. 12kV to 15kV)
- 20/80 to 80/20 balance adjustment – charges of either polarity are neutralized equally well
- LCD display provides clear indication of real-time performance and system settings
- Customer-adjustable alarm setting – the need for maintenance is clearly signaled before quality issues arise
- Integral feedback - simplifies and reduces overall cost of closed loop feedback installation
- Internal switchmode power supply accommodates all standard AC supplies worldwide

- Remote on/off allows simple interlocking with the machine's running state
- Software lock-out prevents unauthorized adjustment
- Analog outputs offer easy remote logging of performance and residual balance

www.gardco.com

X Marks the Spot

The SATAjet X 5500 spray gun and nozzle were unveiled in September at the Auto-mechanika Show in Frankfurt, Germany and became available in Canada and the U.S. in November. The system offers the high speed and durability of current product offerings, plus the option for a soft, controlled nozzle feel.

Both application technologies – HVLP and RP – remain available, but now each of them has the additional option of an "I" or "O"-nozzle set. In line with the increasing nozzle sizes within each of the respective technologies (HVLP/RP), the material flow rate increases with constant increments, which means that the spray fan size and width remain unchanged across the entire nozzle spectrum.

End-users can now rely on a transparent and consistent system which offers them clear and well-structured application options.

The I-nozzles produce a parallel spray fan pattern with a minimal dry zone and a drier center, which is ideal for painters preferring a reduced application speed and maximum application control. The film build per coat in comparison to an O-nozzle of the same size is slightly reduced.

The O-nozzles have an oval-shaped spray fan pattern with a larger dry zone and a wet core to accommodate increased application speed at the expense of slightly less application control during the painting process. The film build per coat in comparison to an I-nozzle is slightly higher.

www.sata.ca

Chemical-Resistant Canopy Hoods suited for Paint Kitchens

Canopy Hoods by HEMCO are designed to collect and exhaust corrosive vapors, heat, steam, and odors when mounted over areas with water baths, hot plates or portable equipment. Canopies are available in wall, island and corner canopy models, and in either stainless steel or fiberglass. Manufac-



tured of molded one-piece composite resin, fiberglass canopy hoods are lightweight and can be wall-mounted or suspended from the ceiling over island locations.

The hood's glass smooth surfaces provide superior chemical, corrosion and heat resistance. Optional side panels prevent cross drafts and further improve airflow while providing a way to contain chemical spills.

www.HEMCOcorp.com/canopy.html

DSM Expands Hybrane Resins Family

Global coating resins-maker Royal DSM has launched a new product called Hybrane CY235 which it says is well suited to the ACE, general industrial and car refinish metal coating industries. It will enable enhanced coatings performance, higher throughput and reduced energy consumption.

A spin-off of CY245, Hybrane CY235 uses lower curing temperature as well as offers good adhesion, VOC friendliness and faster drying.

Unlike some high solid acrylic resins, which typically require forced drying conditions at 60 C for 30 minutes, Hybrane CY235 only requires a curing temperature of 40 C. In this way, Hybrane CY235 can deliver energy savings of up to 48 per cent compared to standard alternatives.

The faster drying possibilities means the resin also shortens the spray booth cycle time by 20 per cent. These operational benefits in no way compromise the performance of Hybrane CY235, the company says, which delivers excellent hardness, a high-quality appearance with distinctiveness of image, and high reactivity without compromising on pot life.

"Moving forward, we will continue to develop our Hybrane proposition in line with market demand," says Ap Heijenck, Industry Manager Industrial Metal & Plastic at DSM. "In particular, we will channel our development efforts to deliver Hybrane products for an even wider range of industries and also extending the application to different substrates like plastic and wood. We're confident that our Hybrane technology will open up new coating horizons in terms of sustainability and processability."

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Let our history improve your future.

For nearly 200 years, AkzoNobel has provided the world's leading manufacturers of cabinetry, furniture, flooring and building products with top quality industrial wood finishes to beautify and protect their products. We are proud to manufacture our products in Canada to serve our Canadian customers.

We identify color trends and translate them into relevant color palettes and products that meet our customers' expectations in every circumstance. Our coatings are designed to offer protection of your wooden home features to ensure the beauty lasts.

Our customers trust that the AkzoNobel wood coatings team is at the forefront in capturing what is happening in architectural color, soft-furnishings and fashion and translating into color and texture trends, via trend research that we do in our Global Design and Color center in High Point, NC. In collaboration with our customers in furniture, cabinetry, flooring and building products we create unique, complementary aesthetic wood coating finishes. With today's trend of wire brushing and heavy distressing we also focus on the touch and feel of the coatings. Wooden flooring brings in another element to enhance the home interior. Hand scraped and wire brushing continues to add to the haptics of flooring, however matte low gloss is the growing trend. Kitchens are the heart of our homes, they need to combine aesthetics and longevity. Our AkzoNobel wood coatings provide outstanding protection and unrivalled beauty to cabinetry, furniture, flooring and building products.

Our highly trained Technical Service team works closely with the Wood Design team to ensure that our finishes are robust and can be industrialized consistently and are repeatable across the globe.

Our brands

AkzoNobel is our primary brand for OEM manufacturers while Chemcraft® continues to be the brand of choice throughout our strong distribution network.

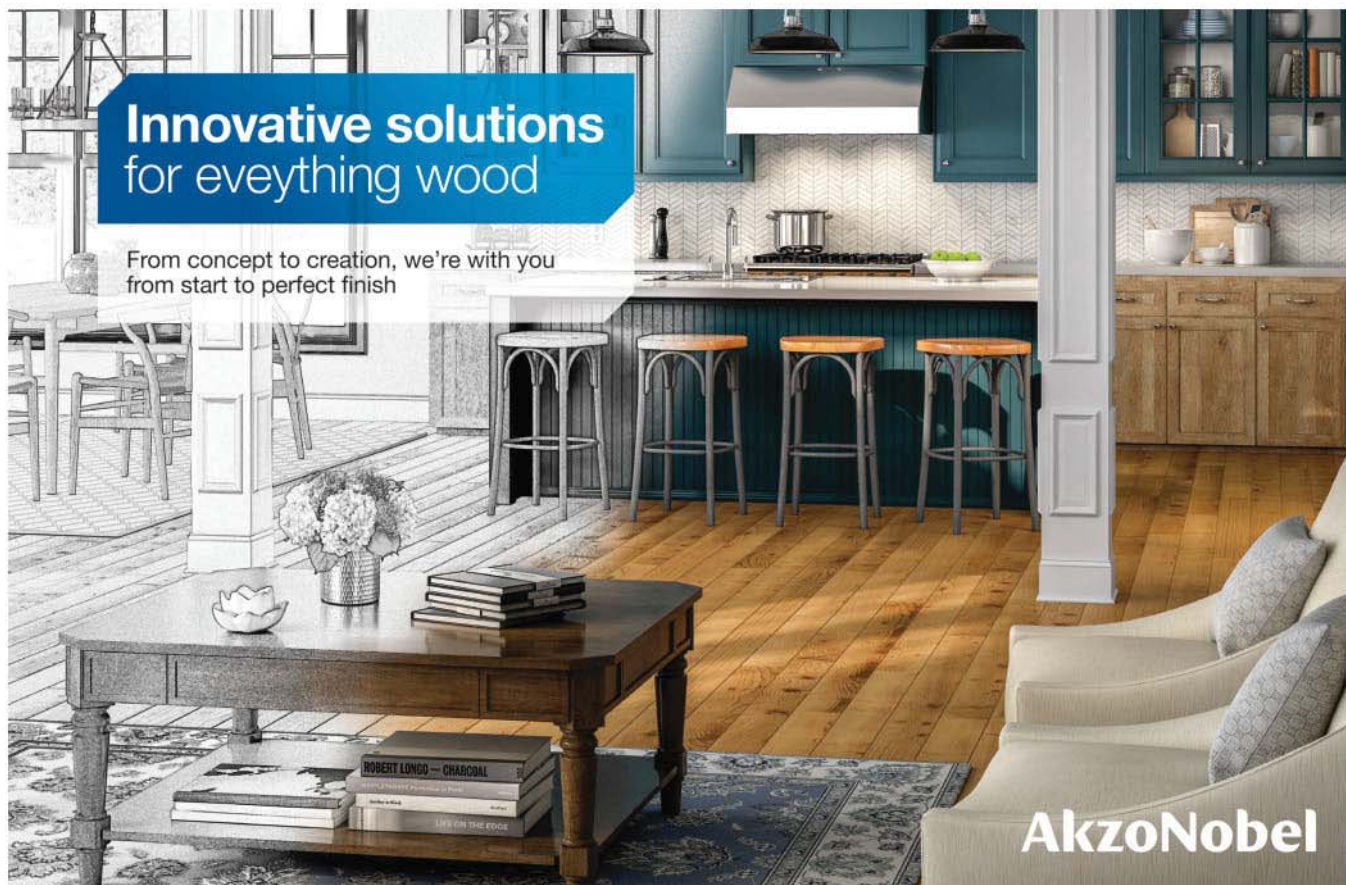
To find a distributor near you, along with information and tools regarding the Chemcraft® brand products please use our distribution website.

www.chemcraft.com

Explore our website, www.akzonobel.com/corporate-product/wood-coatings, to learn more about how AkzoNobel can solve your finishing challenges and help your business thrive. Don't hesitate to contact us with questions or requests.

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AkzoNobel

Innovation

Quality

Support

Sustainability



Everything you need to succeed

- **Innovation.** Our innovative technologies and cost efficient systems eliminate waste, minimize labor, and reduce the applied cost



- **Quality.** Our products go through exhaustive testing and quality checks before being introduced into the market. We follow up with our end-users to ensure the vbest possible experience when using our products
- **Support.** We stand behind our products and support our customers every step of the way. We provide consultations and lab testing to help meet special challenges
- **Sustainability.** We have a firm commitment to reducing our impact on the planet by delivering more sustainable products and solutions to our customers

Visit chemcraft.com for more information and to locate your nearest distributor