



CFCM

CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

FEATURE SECTION

- Plating and Anodizing
- Understanding Aluminum Hardcoat

New Trends in Rectifiers
The Fine Art of Pretreatment
Pushing the Limits with Conveyors
Selecting Mineral Fillers
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SEPTEMBER/OCTOBER 2015



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Once more unto the Breach

Years ago, I started working on a trade magazine in the plastics industry, and had to write an editorial for my first issue. I explained that I was fresh to the industry, and expected it to take me a couple of years to understand things properly.

This is my third such new beginning, and I'm no longer as smug. After two years in that editor's chair, I realised I'd only discovered how much I didn't know, and that I'd always be learning new things.

Remember that tangled quote about managing "known and unknown unknowns"? As a consequence of my first editor's job, it always made sense to me. With a whole industry to watch, you're never completely up to speed.

Right now, I'm grateful for my prior experience, because several company names in the paint and coatings field are the same, as is some terminology. Back then, I did learn to tell my monomers from my oligomers, and my additives from my pigments.

Yet equally, in paint and coatings there are methods, materials, equipment and – most importantly – an industrial culture, that are unique. Nobody talks much about 'culture' in industry, but the technical sophistication needed for any manufacturing, as well as the types of markets served, has a big effect on how people involved see themselves.

I expected to encounter people showing a sensible level of pride in that know-how and ability to serve customers with challenging needs. What has pleasantly surprised me is the amount of technical development still happening in this field. For our website recently, I've written stories about new

production methods, about a completely new class of inorganic blue pigments, and about various areas where conventional chemistries are being tweaked using unconventional methods.

I left plastics in 2010, when the conventional wisdom was that industry in Canada was headed over the cliff. It's taken some heavy knocks, as none of you need me to point out, but manufacturing is still a vibrant sector of the economy, and still attracts creative minds and enthusiastic entrepreneurs.

Right now we have uncertainty around the federal election, plus a Loonie so low in value that importing raw materials is a constant issue for the bottom line. China might be receding as a major competitor, but the next generation of up-and-comers is right behind it. At press-time, nervous stock markets were adding another 'known unknown' to the mix.

What I do hope I bring to this magazine is enough experience in publishing (another industry that was going over the economic cliff, yet didn't) to keep the problems in perspective. I started in trade magazines because I was desperate for a job. I stayed in the game after discovering manufacturing calls forth an attitude from everyone that convinces me there's hope, even on the bad days.

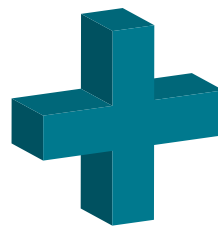
I look forward to being a sounding board for this publication's readership.

Edward Mason
edward.mason@cfc.ca

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Association News

New Phthalate Assessment Process Announced

Phthalates are back in the news again as the Federal Government moves to broaden its risk assessment process for these substances. The Canadian Paint & Coatings Association has notified members that at the end of July, the government published its Proposed Approach for Cumulative Risk Assessment of Phthalates, for a 60-day public comment period ending September 30, 2015.

This was issued along with four State of the Science Reports related to short-chain phthalates, medium-chain phthalates, long-chain phthalates, and the special case of DINP (diisononyl phthalate). This is being considered as a medium-chain phthalate for the purposes of the health review, and as a long-chain phthalate for the purposes of the ecological review.

Due to the possibility that some phthalate substances may have common health effects of concern, the potential for cumulative risk from combined exposure to these substances was addressed by expanding the scope of the Phthalates Grouping from the original 14 phthalates to include an additional 14 phthalates, including

three previously assessed under the Canadian Environmental Protection Act, 1999: dibutyl phthalate [DBP], butyl benzyl phthalate [BBP], and diethyl hexyl phthalates [DEHP]. Other phthalates on the Domestic Substances List, or those that have been notified for use in Canada under the New Substances Notification Regulations (Chemicals and Polymers) may also be considered in the cumulative risk assessment.

Full copies of the State of the Science (SOS) reports can be requested from the government's Substances Management Information Line. All formal comments on the approach and four reports must be sent to the same e-mail address prior to September 30.

The proposed approaches to assessing phthalates were presented to stakeholders at a multi-stakeholder technical workshop in March 2014 to obtain their input. The CPCA reports that stakeholders were generally supportive of the proposed approaches, and expressed a strong interest in providing scientific input. Further to feedback received during the workshop and in consideration of the complex scientific issues, and recent international developments on phthalates, the original risk assessment timelines for the Phthalates Substance Grouping

were adjusted by one year.

The additional activity of releasing State of the Science (SOS) Reports and a Cumulative Risk Assessment (CRA) approach was undertaken to solicit input on the science prior to publication of a Draft Screening Assessment Report (DSAR), including an assessment of cumulative risk. The DSAR is tentatively planned for publication in the summer of 2016.

CPCA is asking all members using or selling phthalates for paint formulations to carefully review the proposed approach and four State of Science (SOS) reports. The reports will be posted for members only, for reference. Members of the association are invited to share any concerns and comments they have on the proposed approach and SOS reports with CPCA prior to September 21. If deemed necessary, CPCA will file comments on their behalf, in addition to comments on behalf of the membership generally.

Company News

Western Woodworking Show Building a Buzz

Anticipation is growing for Western Canada's new secondary woodworking show, Canada Wood-

PosiTest® Pull-Off Adhesion Tester

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FABTECH 2015

CCAI's FINISHING Pavilion Features Largest Show Floor Yet

FABTECH returns to Chicago, IL, November 9-12, 2015, bringing together an anticipated 40,000 attendees and more than 1,500 exhibiting companies all under one roof. The show provides a backdrop for visitors to experience live equipment demonstrations, find cost savings solutions, and network with industry peers throughout the 500,000+ square feet of show floor.

CCAI's FINISHING Pavilion at FABTECH is the finishing industry's largest trade show and conference dedicated to all finishing technologies. As a partner in North America's largest metal forming, fabricating, welding and finishing event, CCAI is proud to be a part of bringing all manufacturing technologies together at FABTECH each November. It is the now the destination show and conference for all those involved in the FINISHING industry.

FINISHING Pavilion Exhibitors (as of August 27)

Abrasive Products & Equipment
ACT Test Panels, LLC*
ADF Systems Ltd.
Adhesive Systems, Inc.
Advanced Energy
AFC Finishing Systems
Akzo Nobel Powder Coatings*
American Finishing Resources*
American Grinders Inc.
Amiberica, Inc.
Anest Iwata USA
Apel International Inc.
Argon Masking Corp.
Assured Testing Services
ATS Applied Tech Systems
Axalta Coating Systems*
AZZ Galvanizing
Baril Coatings USA
BASF Corp.
Bayco / Guspro Inc.
Bel Air Finishing
BEX Spray Nozzles
Blast Cleaning Technologies -
div of Metcast
The Blast Shop
Blastman Robotics Ltd.
Bronco Blast Equipment/
Industrial Associates
Bulk Chemicals, Inc.
Caldan Conveyor A/S
Calico Coatings
Calvary Industries Inc.*
*Canadian Finishing & Coatings
Manufacturing*
Caplugs, Inc.
Castrol Industrial North America
Cataforesis S.A. de C.V.
Catalytic Combustion
Catalytic Industrial Systems
CCAI*
Cefla North America
Chameleon Innovations
Chemco Mfg. Co. Inc.
Chemetall*
Chemico
ChemQuest Inc.*
Clean Air Consultants/ Filter 1
Clean Air Technology Solutions
Clemco Industries Corp.
Col-Met Engineered Finishing Solutions*

Columbus Industries, Inc.
Combustion and Systems, Inc.
Conforming Matrix Corp.
Coral Chemical Co.*
Crest Industrial Chemicals, Inc.*
CRW Finishing, Inc.
Custom Fabricating & Supplies
Daifuku North America
Datapaq, Inc.
DeFelsko Corporation
Dinamec Systems
Doucet Machineries Inc.
DuBois Chemicals*
DuPont Teflon Industrial Coatings
Duroair Technologies Inc.
Dynabrade Inc.
Echo Engineering & Production
Supplies, Inc.*
Eisenmann Corp.*
Elcometer Inc.
The Electrocoat Association
ElektroPhysik USA Inc.
Elevance Renewable Sciences
Empire Abrasive Equipment LLC
Empowering Technologies Inc.
Enhancement Technologies/
Sublitex-Miroglgio*
EPSI Masking Co.*
Ervin Industries Inc.
Everest Elektromekanik Makine
Express Chem LLC
Finishing Brands*
Fischer Technology Inc.
Fostoria Process Equipment,
div. of TPI Corp.*
Paul N. Gardner Co., Inc.
Gema
General Automatic Transfer Co.
General Fabrications Corp.
Gibson Abrasive Equipment, LLC
Global Finishing Solutions LLC*
Gostol TST d.d.
Graco Inc.
Greenkote USA
Hedson Technologies North
America Inc.
Henkel Corp.*
Hentzen Coatings, Inc.*
Heraeus Noblelight America*
Herr Industrial, Inc.

Houghton International, Inc.
Hubbard-Hall Inc.*
IFS Coatings, Inc.
IHC Inc.
Intek Corporation
IntelliFinishing*
Intertek
Iowa Waste Reduction Center
IST International Surface Technologies
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Keyland Polymer Ltd.
KMI Systems Inc.*
Koch Filter Corp.
George Koch Sons, LLC*
Kolene Corporation*
LDPI, Inc.
LPI, Inc.
LPR Global, Inc.
Magic Rack/Production Plus Corp.*
Main Tape Co.
Maryland Hydrographics and
Powder Coating
Metal Coaters / Metal Prep
Metokote Corp.
Midwest Finishing Systems, Inc.*
Mighty Hook Inc.*
MPC Plating, Inc.
Munters Corp.
NikoTrack
Nordson Corp.*
Northern Coatings & Chemical*
Northrop Grumman Information Systems
Orient Corp. of America
Osborn
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Pollution Control Products Co.
Porcelain Enamel Institute, Inc.
Powder Coating
The Powder Coating Institute
Powder Parts, Inc.
PPG Industries, Inc.
Precious Plate Inc.
Precision Quincy Ovens LLC
Pretreatment Equipment Manufacturing*
Proceco Ltd.
*Products Finishing Magazine**

Prona Tools Inc.
Protech Powder Coatings
Rapid Engineering LLC*
Reading Technologies Inc.
Reliant Finishing Systems*
Rhodes Systems International
Richards-Wilcox, Inc.*
Rohner
Ruwac
Safety-Kleen/ EcoPower
Sames - EXEL North America*
Sata Spray Equipment
Selas Heat Technology
The Sherwin-Williams Co.*
Shop Floor Automations
sia Abrasives
SIT
Southern Systems, Inc.
Specialty Metals Processing
Sponge-Jet, Inc.
Spray Systems, Inc.
SprayTech / Junair
Stoelting, Inc.
Sunher Industrial Products
Sunkiss Mathern Radiation
Superfici America Inc.
System Technologies, Inc.
Tanis Inc.
TCI Powder Coatings
TekVisions, Inc.
Therma-Tron-X, Inc.*
Tiger Drylac USA, Inc.
Top Cat Air Tools
TQC-USA Inc.
Transmet Corporation
Trimac Industrial Systems, LLC*
Uni-Spray Systems Inc.
United Industries, Inc.
Valmont Coatings
Vapor Technologies
Venjakob Maschinenbau/Nutro Inc.
VitaFlex LLC
Vitracoat America Inc.
Vogel Industrial Coatings*
Vulkan Blast Shot Technology
Wagner Industrial Solutions*
Walther Pilot North America*
Webb-Stiles Company*
Whiting Corp.
Wisconsin Oven Corp.

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FABTECH also provides learning opportunities beyond the exhibits with over 100 educational sessions and expert-led presentations on the latest industry trends and technology in the metal forming, fabricating, welding and finishing industries.

CCAI is proud to announce 50 hours of FINISHING education at FABTECH 2015, including more than a dozen new sessions. Also new this year are our Finishing Spray Painting Workshops, where attendees will receive classroom instruction and be trained using a virtual reality spray painting system. This training has limited registration, so register early to ensure your place.



For full descriptions of educational sessions, and to see conference sessions for all FABTECH technologies, visit www.fabtechexpo.com and click on the **EDUCATION** tab. Use code **SAVE3CC** when registering to receive 30% off FINISHING Conference Sessions!

FINISHING Conference Schedule-at-a-Glance

MONDAY, NOVEMBER 9		SCHEDULE-AT-A-GLANCE	
TECHNOLOGY	8:00 AM - 10:00 PM	10:30 AM - 12:30 PM	1:30 PM - 3:30 PM
FINISHING		C20: Conceptos Basicos de Pintura en Polvo en Espanol B	C30: NEW! Powder Coating Basics B
		C21: NEW! Spray Booth Design: Do It Right I	C31: Basics of Electrocoating B
		C22: NEW! Keys to Successful Finishing: Hooks, Racks & Stripping B	C32: NEW! Curing Options for Industrial Finishing Operations I
TUESDAY, NOVEMBER 10			
TECHNOLOGY	8 AM - 10 AM	10:30 AM - 12:30 PM	1:30 PM - 3:30 PM
FINISHING	C40: NEW! Getting Your Part Across B	C50: NEW! Preventive Maintenance & Troubleshooting Your Powder Coating System A	C60: FINISHING Spray Painting Workshop B 1:00 p.m. - 5:00 p.m. \$299 for members and \$349 for non-members
	C41: NEW! The Future of Liquid Industrial Finishing B	C51: Testing: Why It's Important & How to Do It Effectively B	
	C42: NEW! The Secrets of Purchasing a Finishing System B	C52: NEW! Old vs. New! Are You Ready for a Pretreatment Change I	
WEDNESDAY, NOVEMBER 11			
TECHNOLOGY	8:00 AM - 10:00 AM	10:30 AM - 12:30 PM	1:30 p.m. - 3:30 PM
FINISHING	C70: NEW! Optimizing a Batch Powder Coating Operation I	C80: NEW! Painting Over Hot Dip Galvanizing I	C90: NEW! Powder Coating Color Change & Transfer Efficiency B
	C71: NEW! Troubleshooting for E-Coat Imperfections A	C81: Efficient Curing with Infrared B	C91: NEW! Getting the Most Out of Your Pretreatment I
	C72: NEW! Modernizing the Abrasive Air Blast Facility with Tech Tour I	C82: NEW! Safety Codes & Compliance: How Important is It? I	C92: NEW! Saving Costs on Your Plating Line I
THURSDAY, NOVEMBER 12			
TECHNOLOGY	8:00 AM - 10:00 AM	10:30 AM - 12:30 PM	1:30 p.m. - 3:30 PM
FINISHING	C100: FINISHING Spray Painting Workshop B 8:00 a.m. - 12:00 p.m. - \$299 for members and \$349 for non-members		

BASF Opens Auto Refinish Center

BASF Canada has opened its new Automotive Refinish Technologies (ART) store and fulfillment center. The opening ceremony was on June 19, at the new location, 5850 Rhodes Dr. in Windsor, ON.

Like the company's other ART centers, it will tint and mix custom formulas for specialty applications and custom projects. It is equipped with the latest technologies, and distributes, among other products, the R-M, Glasurit and Limco product lines.



Opening BASF's new Automotive Refinish Technologies store and fulfillment center.

working West, taking place October 7-8, 2015 at Tradex in Abbotsford, BC. Organizers report that the woodworking community is excited about finally having a show specifically for Western Canada's cabinet manufacturers, residential and commercial furniture manufacturers, custom wood product manufacturers, architectural woodworkers and millworkers.

Exhibitor confirmations from key players in the western market include Upper Canada Forest Products, Formations, Richelieu, E.Roko, PJ White, Masse Sales, Canadian Woodworker, Clermont's Ultimate Tool, Multicam, and many more.

Educational seminars and an expansive exhibit floor will offer extensive opportunities for networking with industry peers. And according to Mike Neeb, show manager for Master Promotions Ltd., endorsements from regional industry leaders – UBC Centre for Advanced Wood Processing, CKCA, FP Innovations, The Wood Manufacturing Council, and AWMAC British Columbia – ensure this will be a must-attend event for the secondary woodworking industry.

"We are building on this core group of major exhibitors and associations to ensure a top quality event for our show visitors," he said. "Canada Woodworking West offers the excitement of a new show in a proven and growing market. Following the success of Canada Woodworking East, which took place in Montreal in September 2014, Canada Woodworking West is expected to attract all the industry's major exhibiting companies along with

thousands of qualified attendees from across Western Canada and the US."

Econo-Rack Bought by Raymond Corp.

G.N. Johnston Equipment Co. Ltd., a sales and service center of Raymond Corp., has acquired the assets of Econo-Rack Group Inc. Econo-Rack became a wholly owned subsidiary of Johnston on August 1.

Econo-Rack is a Canadian manufacturer and dealer of racking and related material handling products and services. The company has eight locations, including a 210,000-sq-ft manufacturing facility in Brantford, ON. Combined, Johnston and Econo-Rack have more than \$400-million in annual sales and employ 1,150.

"This acquisition adds value for customers, both current and prospective, through expanded product offerings for diverse application and operational needs," said Michael Marcotte, president and chief executive officer for Johnston.

G.N. Johnston has been in business for 60 years, and in Canada has 14 strategically located offices.

BASF to Combine Pigment Businesses

BASF SE plans to form a global business unit next year to combine all its pigments activities. These generated sales of about US\$1.08-billion in 2014. In the second half of the year, BASF intends to carve out its pigments business and establish

separate legal entities.

"By creating an organization fully dedicated to pigments, we will adapt better to the challenges in the pigments industry," said Alexander Haunschild, senior vice-president of the regional business unit Pigments and Resins Europe, who has been named head of the new global business unit.

The new business unit will likely be headquartered close to Ludwigshafen, Germany. All employees who are dedicated to the pigments business will be transferred to the new unit.

Chemours to Shut TiO₂ Sites

The Chemours Company, formerly operating as DuPont, has announced two fresh elements of the company's five-point transformation plan. It will close its Edge Moor, DL, manufacturing site located outside Wilmington, DL, which produces titanium dioxide (TiO₂) and will shut down a TiO₂ line (line 3) at its Johnsonville plant in New Johnsonville, TN.

Together, these actions will eliminate roughly 150,000 metric tonnes of TiO₂ capacity while refocusing production at four manufacturing sites that employ the full range of Chemours TiO₂ technology strengths. These changes, the company says, position Chemours to grow in the TiO₂ industry by enhancing its production capabilities.

"The decisions we are announcing today are connected directly to our five-point transformation plan, which sets out a clear, achievable path to our becoming a higher value chemistry company," said Mark Vergnano, president and CEO of Chemours.

GM Invests in Oshawa Output

GM Canada is investing \$12-million to increase Chevrolet Equinox production on the Consolidated production line at its Oshawa Assembly plant, as well as for related changes in the body shop at CAMI Assembly. According to president and managing director Steve Carlisle, this will help to meet strong North American customer demand for the Chevrolet Equinox. The investment extends plans for ongoing Oshawa Assembly Consolidated Line production to 2017.

Carlisle, added that this builds on GM's Ontario Equinox 'shuttle program' and allows the company to ramp up production in a timely and cost-effective way.

In 2010, the Equinox Shuttle program was established between GM's Ingersoll CAMI and Oshawa Assembly operations. CAMI's Body Shop produces extra Chevrolet Equinox units beyond the plant's existing capacity to paint and assemble them. Vehicle body assemblies are then shipped to the Oshawa plant for paint and final assembly.

The Oshawa Assembly plant currently produces the Chevrolet Equinox and the previous generation Chevrolet Impala on its Consolidated Line, as well as the Buick Regal, the current model Chevrolet Impala, the Chevrolet Camaro and the Cadillac XTS on its 'Flex Line'.

The company has announced the Chevrolet Camaro will end production in Oshawa in November 2015 and expects to manage that change without layoffs, due the use of incentivized retirement programs. GM has invested approximately C\$800-million in its Oshawa and St. Catharines operations over the past three years and recently announced a further \$800-million investment in its CAMI operation in Ingersoll, ON.




GM's investment in Oshawa primarily serves the Chevrolet Equinox.

The Edge Moor plant is configured to produce a TiO₂ product for use in the paper industry, in applications that have declined steadily for years, with an accompanying slowdown in demand that has resulted in underused capacity at Edge Moor.

"A plant closure is never an easy decision, because of its impact on people who are valued members of our company," said E. Bryan Snell, president of Chemours Titanium Technologies.

"However, we believe this is the right business decision. Chemours is committed to the TiO₂ market, and these changes position us for growth in the industry. plants in Mississippi, Tennessee, Mexico and Taiwan enjoy industry-leading productivity, as well as the ability to use ore feedstock across the quality spectrum. These factors give us a low-cost position that is a key competitive advantage."



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Troy Buys Ashland Biocides Business

Troy Corp. (Florham Park, NJ) has signed a definitive agreement to acquire the industrial biocides business from Ashland Inc. The transaction is expected to close by the end of July, contingent on standard closing conditions and completion of required employee information and consultation processes. Financial terms were not disclosed.

Ashland Specialty Ingredients' industrial biocides business was formerly owned and operated by ISP Inc. and includes the Fungitrol brand of dry-film preservatives and Nuosept brands, which are supplied to the paint and coatings industry and allied markets. The company's consumer specialties business unit, which includes preservatives for the personal care market, is not part of the agreement with Troy.

Axalta Forms Alliance with Hempel

Axalta Coating Systems has formed a strategic relationship with Hempel (USA) Inc. This arrangement facilitates the formulation and availability of a coating system for external coatings with significant corrosion protection, and internal coatings with advanced flow efficiency for natural gas transmission pipes in the North American oil and gas pipeline market.

"We, at Axalta, are thrilled to partner with Hempel to offer a full product line of world class powder and liquid coatings for the North American market," stated Ron Hull, Axalta's North American sales manager.

This new business relationship combines the corrosion protection found in Axalta's fusion-bonded-epoxy powder for external pipe for oil and gas pipelines with Hempel's, liquid, flow-efficient epoxies for internal coating.

The resulting product is a corrosion and abrasion-resistant internal and external coating suitable for the harshest of environments.

"By pairing Hempel and Axalta's product offerings, we offer the gas-pipe industry an unparalleled technology and competitiveness platform," added Martin Miller, Hempel's US downstream segment manager.

New Pigment Proves Useful in Paint and Coatings

A new pigment – YInMn blue – that was discovered by accident by Oregon State University chemists, will enter the marketplace later this year. Researchers say it has no toxic ingredients, and be used in a wide range of coatings and plastics. It is being marketed by The Shepherd Color Co.

In 2009, OSU chemist Mas Subramanian and his team were experimenting with new materials that could be used in electronics applications, and they mixed manganese oxide – naturally black in color – with other chemicals then heated them to nearly 2,000 deg F. One sample that came out was a vivid blue.

"It was serendipity, actually, a happy, accidental discovery," says Subramanian, who is the Milton Harris Professor of Materials Science in the OSU College of Science.

The pigment is formed by a crystalline structure that means the manganese ions absorb red and green wavelengths of light, only reflecting blue. The vibrant blue is so durable, and its compounds are so stable, even in oil and water, that it will not fade. These characteristics make it usable in a variety of commercial products. In paints, it can help keep buildings cool by reflecting infrared light.

"This new blue pigment is a sign that there are new pigments to be discovered in the inorganic pigments family," says Geoffrey T. Peake, research and development manager for The Shepherd Color Co. Commercial quantities of the pigment will be available later this year.

Covestro is New Name for Bayer MaterialScience

Bayer has announced that the new name of its MaterialScience business will be Covestro. The name change became effective on September 1, 2015. It intends to float Covestro on the stock market by mid-2016 at the latest. The plan for Bayer MaterialScience to become a separate company was announced last September.

The name Covestro is made from a combination of words that reflect the identity of the new company. The letters C and O come from collaboration, while VEST signifies the company is well invested in state-of-the-art manufacturing facilities. The final letters, STRO, show the company is strong. It is strong in innovation, strong in the market and with a strong workforce.

Patrick Thomas, CEO, said that being separate would give the new company greater flexibility to independently pursue its business goals.

"The platforms for this will include our leading market positions, favorable industry dynamics, our state-of-the art asset base with leading process technology, a portfolio including a high-value specialty business as well as an outstanding team of highly skilled and motivated employees," he said.

DuBois Completes Purchase of Heatbath and Park Metallurgical

DuBois Chemicals, Inc. has completed the acquisition of Heatbath Corp./Park Metallurgical based in Indian Orchard, MA. The acquisition combines DuBois paint pre-treatment, cleaning and metalworking expertise with Heatbath's heat treating and metal finishing proficiency. The Heatbath acquisition extends and enhances the full range of cleaning and process

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Castolin Eutectic Promotes Gas Atomizer Coatings

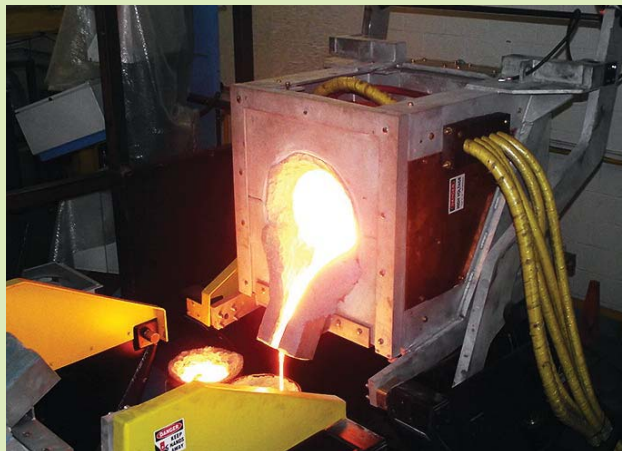
Castolin Eutectic has launched its next-generation gas atomizer program at its plant in Granby, QC. This permits the company to produce high quality thermal spray & PTA coating powders.

“The new gas atomizer reflects our ongoing commitment to bring the latest technology to our customers,” says Gordon Roseborough, president and CEO of Eutectic Canada. “We trust this investment will strengthen our leadership in both NAFTA and international markets.”

With the evolution of recent technology for plasma transferred arc welding (PTAW), laser-clad coatings and the need to reduce environmental impact when compared to hard chrome plating, the company sees increasing demand for gas-atomized powders. The gas atomizer will enhance development and in-house production of advanced wear solutions.

The gas atomizer is now producing quality metal and metal-matrix powders to provide higher cost benefits and longer component life cycles. These powders have perfectly spherical particles that result in high density, porosity-free deposits.

The unique alloy properties require minimal heat input and achieve



The gas atomizer process produces high-quality thermal spray and PTA coating powders.

high deposition rates. The alloy range includes self-fluxing alloys in nickel, cobalt and copper, as well as metals and metal alloys to meet ASTM and customer specifications. The gas atomizer has also a special feature to allow high pressure atomization for fine powder production.

chemical solutions that DuBois delivers to a diverse range of manufacturing customers.

“With the addition of the expertise, products and services of Heatbath, DuBois is uniquely positioned with the most comprehensive metalworking, heat treating, metal finishing and paint pretreatment solution offering of any supplier in the market,” said Jeff Welsh, CEO of DuBois Chemicals. “We expect to present many new solutions to support our mutual customers with broadened technology, innovative products and application know-how.”

Tripp Walen, Heatbath president & CEO, added: “The addition of Heatbath to the DuBois portfolio expands the ability of both organizations to assist customers to produce the highest quality, consistent and cost effective production in their facilities.”

Next to Succeed Program Selects Interns

Walter Surface Technologies (Montreal), which designs and develops high performance products for the metal working industry, has selected two of Canada’s brightest students for its innovative internship program, Next to Succeed. This program aims to help close the leadership gap among millennials and upper management.

Following the company’s successful launch of Objectif: Relève, the Quebec based internship program started last year, Next to Succeed is the national extension of the program. It fosters the

development of future leaders through a paid internship to advance the careers of business and engineering students at the multinational company’s Montreal-based corporate offices.

Chemical engineering student, Cyril Tremblay, from École Polytechnique de Montréal and MBA student David Wright from University of Toronto’s Rotman School of Management, will join Walter Surface Technologies this summer as the Next to Succeed candidates. They will work directly with executive management and the chairman and CEO, Pierre Somers, on key projects in the areas of Research & Development, Finance, Operations and Marketing.

Huber Acquires Safire Technology

Huber Engineered Materials (Atlanta, GA), a division of J.M. Huber Corp., has acquired the Safire nitrogen and phosphorus halogen-free fire retardant technology from Floridienne Group and Catena Additives, which is a wholly-owned subsidiary of Floridienne. Huber’s goal is to take the patented Safire technology, integrate it within its existing halogen-free portfolio of flame retardants and smoke suppressants, and rapidly develop a line of commercial products.

“The addition of the Safire technology is another exciting step in the ongoing growth of Huber’s Fire Retardant Additive business, as we continue to strengthen our array of halogen-free flame retardant offerings,” says Jerry Bertram, vice-president and general manager of

the Fire Retardant Additives business unit. “This acquisition gives Huber the opportunity to work in a new category with nitrogen and phosphorus flame retardants, and we believe the synergistic benefits and value between Safire and many of our current products will be advantageous for customers.”

The Safire technology addition marks the third acquisition over the past five years for Huber’s growing Fire Retardant Additives business, following the 2012 purchase of the specialty hydrate flame retardant business from Almatix and the 2010 acquisition of the Kemgard flame retardant and smoke suppressant business from Sherwin-Williams.

Alent plc Bought by Platform Specialty

Platform Specialty Products Corp., the parent of Macdermid, has agreed to acquire Alent plc, the parent company of Enthone, in a cash and stock transaction for approximately US\$2.1-billion. Including net debt, the total transaction value is approximately \$2.3-billion.

Alent’s business comprises two business segments: Enthone, its Surface Chemistries business that is a global supplier of electroplating chemistry to the electronics, automotive and industrial industries; and Alpha, its Assembly Materials business, which is a global supplier of interconnect materials, primarily into electronics applications.

PUR Needs No Isocyanates

A polyurethane that eliminates the use of isocyanates has won the 2015 Presidential Green Chemistry Challenge Award given by the US Environmental Protection Agency (EPA). Hybrid Coating Technologies is being recognised for developing a safer polyurethane for use on floors, furniture and in foam insulation.

Exposure to isocyanates is known to cause skin and respiratory problems and prolonged exposure has been known to cause severe asthma and even death. Isocyanates are also toxic to wildlife. When burnt, they form toxic and corrosive fumes including nitrogen oxides and hydrogen cyanide. As a result, isocyanates are regulated by the EPA and other government agencies.

HCT's hybrid non-isocyanate polyurethane (HNIPU), also called 'Green Polyurethane,' is formed from a reaction between mixture of mono/polycyclic carbonate and epoxy oligomers and aliphatic or cycloaliphatic polyamines with primary amino groups. The result is a crosslinked polymer with -hydroxyurethane groups of different structure.

HCT developed a novel concept for generating new multifunctional modifiers for cold cure epoxy-amine compositions, namely hydroxyalkyl urethane modifiers (HUM), and subsequently developed HUMs based on renewable raw materials (vegetable oils), which are now used for SPF and UV-cured acrylic polymer based coatings. HUMs provide the cured composition with superior coating performance characteristics including pot life/drying times, strength-stress properties, bonding to a variety of substrates and appearance.

Other characteristics, such as weathering and chemical resistance, are also strengthened while HNIPU is not sensitive to moisture in the surrounding environment.

Cytec Merging with Solvay

Cytec Industries Inc. (Woodland Park, NJ) has entered into a definitive merger agreement with Brussels-based Solvay. The total cash consideration will amount to US\$5.5-billion, corresponding to an enterprise value of US\$6.4-billion. The transaction price per share of \$75.25 represents a premium of 28.9 percent compared to Cytec's closing price of \$58.39 on July 28, and a premium of 26.9 percent compared to the volume weighted average closing share price over the last three months.

The transaction is expected to close in the fourth quarter of 2015.

Rhein Chemie Fuses with LANXESS

The US legal entity Rhein Chemie Corp. has been merged into its parent LANXESS Corp., as the business unit Rhein Chemie Additives. The merger is part of the previously announced LANXESS Group-wide restructuring program, "Let's LANXESS Again," initiated in 2014, that resulted in the merging of several business units.

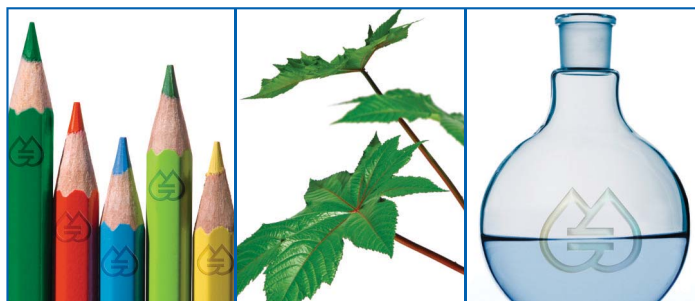
The Rhein Chemie Additives business unit, which came into existence on January 1, 2015, is the combination of the former LANXESS Functional Chemicals business unit, the former Rhein

Chemie business and the former LANXESS Rubber Chemicals business unit's specialty chemicals product line.

The Rhein Chemie Additives business unit develops, manufactures and distributes additives and services for polymer and specialty chemicals processors.

Specialty Carbon Blacks See Price Hike this October

Orion Engineered Carbons is announcing price increases of up to eight percent on its specialty car-



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bon blacks, effective October 1. These increases, the company says, will allow Orion to maintain its service level and supply to its customers worldwide. It adds that the company is committed to an ongoing review of costs and market issues and will inform customers regularly of changes.

E-coat Report Looks at Global Markets

The global e-coat business, a new report says, is at US\$2.87-billion. And by 2020, it will hit \$3.69-billion. The report, available from research firm Mar-

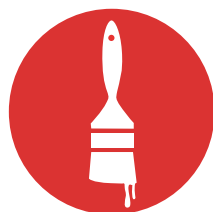
ketsandMarkets, analyzes market drivers, restraints, opportunities and challenges in different regions.

The report identifies primary drivers for the electrocoating market as the growing automotive and appliance industries. While countries such as China, India and Brazil are the major consumers of e-coat, markets in the Middle East and Africa are also growing. In developed countries, market growth is at a low-to-moderate rate. Asia-Pacific is the largest market for e-coat, both in terms of volume and value, followed by western Europe and North America.

The market size of e-coat, the report notes, mainly depends on new production of automobiles such as passenger cars, commercial vehicles, and heavy-duty construction and agricultural equipment. E-coating technology may also help companies comply with environmental regulations. These advantages help to spur demand for the technology in end-use industries such as appliances, automotive, construction and furniture.

The market is restrained by the initial high cost of capital equipment.

For additional information about the report, Electrocoating (E-Coat) Market by Type (Cathodic Epoxy, Cathodic Acrylic, Anodic), by Application (Passenger Cars, Commercial Vehicles, Automotive Parts & Accessories, Heavy Duty Equipment, Appliances, & Others) & By Region - Global Forecasts to 2020, visit: www.marketsandmarkets.com/Market-Reports/electrocoating-market-29663206.html



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Masonry Water Repellents

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fuji-silysia.co.jp
Silica Gel Flattening Agents

Huntsman Advanced Materials

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PTFE and Wax Additives

Southeastern Performance Minerals

gimmica.com
Mica

WPC Technologies

waynepigment.com
Anti-Corrosion Pigments

Polyurethanes Conference to Cover Wide Range of Topics

Attendees of the 2015 Polyurethanes Technical Conference will have the opportunity to explore industry developments, innovations and research in environment, health and safety (EHS) during a dedicated pre-conference workshop and technical session. Hosted by the Center for the Polyurethanes Industry (CPI), the 58th annual conference will be held Oct. 5 to 7, 2015, at the Gaylord Palms Resort and Convention Center in Orlando, Fla.

“In today’s industry, polyurethane professionals go above and beyond to address environment, health and safety,” said Lee Salamone, senior director of CPI. “The Polyurethanes Technical Conference is a place where they can learn about the latest EHS advancements and research, enabling them to continue to uphold our industry’s high standards.”

The pre-conference workshop, titled ‘Introduction to Environmental, Health and Safety (EHS) Issues Relative to Diisocyanates,’ is returning for a third year to give participants an opportunity to learn more about EHS regulations, industrial hygiene, toxicology, medical surveillance and exposure controls.

On Monday afternoon, the conference will feature a dedicated EHS session that will highlight the applications of spray polyurethane foam, ASTM standards and volatile organic compounds (VOCs), and finish with a discussion on environmental and health impacts of VOCs in the atmosphere. In addition, various poster and tech-

nical sessions on spray polyurethane foams, chemical life-cycles and flame retardants will discuss EHS issues.

In addition to exploring these topics, the conference has a full program of technical and poster sessions, and professional development courses.

Solvay Starts Output at Two Locations

Solvay has begun commercial output at two new large-scale, 'on-pipe' alkoxylation facilities in Moerdijk, the Netherlands, and in Singapore. Both units are located in integrated petrochemical hubs and receive ethylene oxide via dedicated pipelines, for a wide range of specialty surfactants made by Solvay's Novacare business.

Emmanuel Butstraen, president of Solvay's Novacare global business unit, said, "In the Netherlands, our teams were able to start production well ahead of schedule to meet the evolving regional supply needs of our customers. Both facilities in Moerdijk and in Singapore are platforms for providing highly competitive and innovative intermediates to further penetrate key markets in Europe and Asia Pacific for our agrochemicals, coatings, home and personal care, industrial and oil and gas markets."

At the recently acquired Moerdijk site, located between the transport and logistics hubs of Rotterdam, the Netherlands, and Antwerp, Belgium, Solvay already is ramping up capacity for the third quarter.

The Novacare plant in Singapore held its opening ceremony in July, after successfully completing trial batch production in May. Novacare is the specialty surfactant manufacturer with 10 production sites, two research & innovation centres in Singapore and Shanghai, China, and a recently opened R&I laboratory in Japan.

Both facilities produce alkoxyates which form the chemical foundation for a broad offering of surfactants used in detergents, paints, lubricants and plant protection.

PPG Completes Waterborne Coatings Plant Expansion

PPG Industries recently completed a US\$5-million expansion at its coatings manufacturing facility in Wuppertal, Germany. The project added equipment to existing buildings on the campus, providing up to a 35 percent increase in annual production capacity of environmentally sustainable waterborne coatings for automotive and industrial applications. The facility, which employs over 190 people, plans to hire employees

to manage the increased capacity.

The additional capacity enables PPG to meet increasing demand for its waterborne coatings by automotive manufacturers and industrial customers in the region.

"Waterborne coatings offer manufacturers a more sustainable alternative to typical solvent-based coatings by reducing volatile organic compounds," said Jean-Marie Greindl, vice president, automotive original equipment manufacturer (OEM) coatings, Europe, Middle East and Africa (EMEA), and president, PPG EMEA. "PPG has been at the forefront of this technology throughout its evolution and holds a leading position in this segment in Europe."

Acrylic Coatings Market set for Steady Global Growth

The technology consultancy Technavio has issued a new report on the global acrylic surface coatings market 2015-2019. This is part of a coatings market portfolio, which covers different markets and countries over the same four-year period.

The company's analysts estimate that this market will grow at a rate of above four percent till 2019. The report discusses in detail the key drivers and trends responsible for growth, as well as the segments with the maximum growth potential.

"With the development of non-slip flooring and increasing applicability of hybrid coatings, it is not surprising that the construction industry segment accounts for 57 percent of the total market revenue for the period of 2014-2019," says Sriram Mohan, lead analyst, chemicals and materials, with Technavio Research.

These non-slip coatings contain a crystal clear polycarbonate aggregate and find application in both interior and exterior surfaces. This coating is exceptionally durable and its advantages include fade resistance and non-yellowing high gloss finish.

This first-of-a-kind coating is expected to gain wide acceptance with time. Increasing preference for hybrid coatings, which are prepared by physically blending an acrylic polymer with another functional polymer like an epoxy, is a key trend that is expected to bolster market growth by overcoming the various inadequacies of conventional acrylic paints.

According to the report, a segment to look out for is the construction industry, which analysts predict is going to grow due to the increasing rate of urbanization in Europe, the Middle East and Africa (the EMEA region), the North American

region and the Americas. The leading companies identified in the global acrylic surface coatings market are Axalta, BASF, DOW Chemicals, Nippon, PPG, Sherwin-Williams, and Valspar.

Henkel Reports Double-digit Growth

Henkel is reporting double-digit growth for both sales and earnings in the second quarter of this year. The main drivers, according to CEO Kasper Rorsted, were solid sales in organics, the strong US dollar and acquisitions the company made last year.

Referring to Henkel's performance in the first six months of 2015, Rorsted stated: "In the first half of 2015 we were able to increase sales by almost 1.1-billion euros to more than 9.1-billion euros. With organic sales growth of 3.0 percent, an adjusted EBIT margin of 16.2 percent and adjusted EPS growth of 12.3 percent, we are on track to reach our full year guidance."

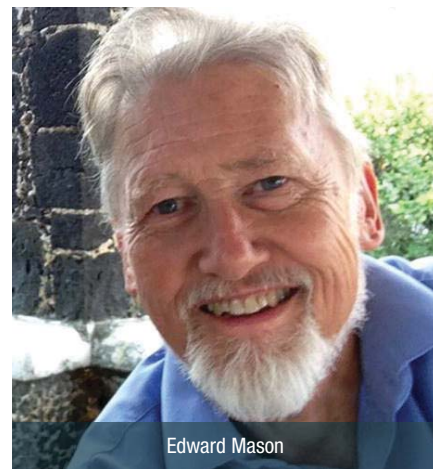
He added that he expects the current difficult global economic environment to persist through 2015, with market volatility remaining high. In this context, he noted, agility and flexibility are key success factors.

"We will therefore continue to adapt, further simplify and accelerate our structures and processes in line with the changing market conditions."

For the full year, he anticipates achieving organic sales growth of 3 to 5 percent. "We expect adjusted return on sales to increase to around 16 percent," he added, "and anticipate an increase in adjusted earnings per preferred share of approximately 10 percent."

People

Edward Mason has joined Canadian Finishing and Coatings Manufacturing as the magazine's



Edward Mason

American Plating Power partners with Service Filtration Canada

American Plating Power (Fort Myers, FL) has enlisted Service Filtration Canada (Mississauga, ON) as a strategic partner for sales of its industrial power supplies in Canada. Service Filtration was selected based on its reputation in Canada, built over nearly three decades, and its expertise in all aspects of metal finishing equipment and production.

“We are proud to partner with Service Filtration Canada,” said Waasy Boddison, President, American Plating Power. “They share APP’s vision of delivering best-in-class solutions to industrial customers and our commitment to delivering superior customer service.” In addition to sales, SFC will provide field support services.

APP, in conjunction with Munk rectifiers, based in Germany, manufactures DC power supplies for a wide variety of industries including electroplating, anodizing, ecoat and water treatment. Styles include SCR, switch mode, pulse, reverse pulse, multi-circuit, DC/AC, and variable transformer rectifiers up to 100,000 amps.



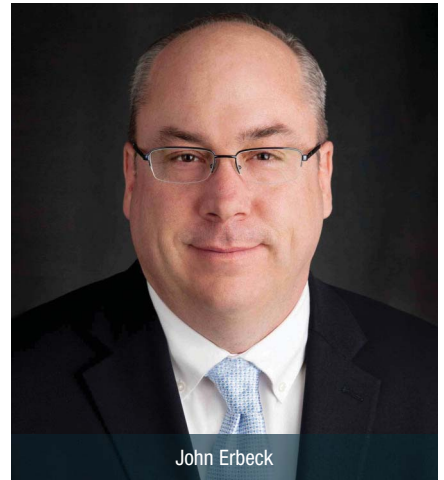
An APP rectifier.



Michael McGarry

and integration of AkzoNobel’s North American architectural coatings business; and, most recently, the acquisition of Consorcio Comex, S.A. de C.V.

Sartomer Americas Names Senior Account Manager



John Erbeck

Sartomer Americas (Exton, PA), a business unit of Arkema Inc. and a supplier of specialty acrylate and methacrylate monomers and oligomers, has named John Erbeck senior account manager. In his new role, Erbeck will be responsible for developing and implementing a strategic sales plan for Sartomer and marketing Sartomer’s specialty chemicals to formulators in New England, Michigan and Canada. He will report directly to Chris Petrangeli, Americas sales manager.

Erbeck joins Sartomer with more than 25 years of marketing, sales and business development experience in the coatings, plastics and graphics arts markets. He began his career with Sun Chemical Corp., where he held technical service and sales roles in the general printing ink division.

editor. He has a background of over 35 years in trade publications. His primary focus was the plastics industry, and for 14 years he edited *Plastics in Canada* magazine.

David Underhill has joined Parker Ionics (Westland, MI) as its national sales manager. He has a wide-range of expertise in marketing, sales management, dealer relations and industry networking, and has been general manager for a vibrant system integrator, engineering manager for a national equipment manufacturer, a system design and sales expert for a national systems provider, and lead sales engineer for a turnkey finishing systems provider.

Angus Chemical Co. (Buffalo Grove, IL) has appointed **Scott Hinkle** as chief financial officer. Hinkle brings more than two decades of financial leadership experience in the chemicals and manufacturing industries, including prior roles at Ecolab and General Electric.

Prior to joining Angus, Hinkle spent 14 years at Nalco, an Ecolab company. During his time there, Hinkle held a variety of leadership positions, including financial director for the company’s paper division, then subsequently its water division.

Yorke Towne Promotes Sales Staff

Doug Taylor has been appointed as the industrial spray equipment sales and service coordinator at Yorke Towne Supplies (Richmond Hill, ON). He



Sam Cesario



Doug Taylor

has more than 35 years of experience in this area and has been at Yorke Towne Supplies for over 15 years.

Additionally, Sam Cesario has expanded his role at Yorke Towne Supplies to include promoting coatings with a focus on the window and door manufacturing market segment. He has been at Yorke Towne Supplies for over 15 years.

PPG Appoints New President

PPG Industries has named Michael H. McGarry as president and CEO. He succeeds chairman and CEO Charles E. Bunch in the CEO’s role. Bunch, who has led PPG for the last decade, will continue as executive chairman.

During his 34 years with PPG, McGarry has served in a variety of positions in the US, Europe and Asia. In recent years, he helped lead several strategic actions that have transformed PPG’s business portfolio, most notably the acquisition of SigmaKalon; the separation of PPG’s former commodity chemicals business; the acquisition

WMS Finishing Preview

Exel North America, Inc.

WMS Booth #1185

The Kremlin Airmix flexible hopper feed system is an alternative to conventional airspray guns and pressure pots. The system is low cost and offers a quick return on investment.



Valspar

WMS Booth #1073

Valspar showcases a wide range of coating applications from flooring and millwork to cabinetry and furniture, highlighting the latest industry color trends.



CCI/Finishworks Canada

WMS Booth #1422

A leading manufacturer and distributor of industrial coatings, CCI offers leading edge coating technology, and trendsetting finish design & field support.

Premier Color Collection is reviewed every 18 - 24 months and updated to keep the selection current with color trends.



AkzoNobel/ Chemcraft

Booth #1149

Akzo Nobel Wood

Coatings' Chemcraft® brand introduces two new product lines, ora-Verde® Unico topcoat and sealer and Promatch® FlexGlaze and FlexGlaze Zero VOC.



Pro Glo Paints Ltd.

Booth #1182

Pro Glo offers the best quality in power tools and lacquers, and carries the German engineered Festool product line and the high-performance Nano-chem Technologies. Pre-catalyzed and post-catalyzed lacquers are available.



Finishing Well-Represented at WMS in Toronto

Plans for WMS 2015, Canada's largest event for the wood industry – the Woodworking Machinery & Supply Conference and Expo – are in full swing. WMS 2015 will be held November 5-7 at the International Centre in Mississauga, ON, just outside Toronto. More than 110 exhibitors and thousands of professionals from North America and beyond will participate in November's biennial event.

WMS is Canada's entry in the international global circuit that includes shows such as IWF in Atlanta and Xylexpo in Italy, drawing exhibitors and attendees from around the globe. The show has more than a four-decade legacy of connecting the Canadian woodworking industry to the world of woodworking machinery and supplies.

We're happy to report that WMS exhibitor commitments are very healthy, with participation from companies like CanLak, Valspar, Gemini Industries, SCM Group, C.R. Onsrud and more than 100 others. We're looking forward to a very productive show.

Technology and workforce development for expanding markets are themes for the most extensive educational program ever presented at WMS 2015. The program features a conference in two tracks – business and technology – along with free presentations on the expo floor.

For more information or to register for WMS, visit www.woodworkingexpo.ca.

CFCM readers can receive 50% off the Nov. 5 conference pass -- which includes lunch, "Profit Booster" Expo Floor Tour and 3-day expo floor admission -- by using the code CFCMPREVIEW before October 9, 2015.

Top 10 Reasons to be at WMS 2015

- #10 **Enjoy Toronto.** Relax and catch up with friends in the industry
- #9 **Get Free Stuff.** Let's face it... the exhibit floor is a great place to fill up a goody bag with exhibitor handouts
- #8 **Catch Up on Wood Industry Trends and Best Practices** -- from industry leaders and wood professionals working in field every day -- during the Nov. 5 industry conference and floor presentations
- #7 **Schedule Face-time with business partners and suppliers.** Even in this digital environment, there's no better way to catch-up -- or size-up -- a business partner than meeting in person
- #6 **Weigh Your Options.** With over 100 exhibitors, be sure you are working with the best of the best by checking out top companies in wood machinery and finishing equipment & supplies
- #5 **Test-Drive** Sanding and finishing machinery and tools
- #4 **Network.** Find new suppliers... who can lead you to new customers
- #3 **See New Products and Technology.** Find new ways to enhance your product offering or operate more efficiently
- #2 **Build Your Bottom Line.** Featuring over 100 exhibitors, a wood industry conference and floor presentations, WMS is a "one-stop" opportunity to enhance your business, see new products and technology in action, establish new customer and supplier relationships and build your business in the wood industry
- #1 **You Won't Have This Opportunity Again until 2017!** WMS enjoys a strong showing of finishing and sanding professionals and exhibitors. Don't miss out!

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Michelman Names Business Development Director



Andrew Michelman

Michelman (Cincinnati, OH) has hired Andrew Michelman as director of business development. He will be responsible for supporting the company's aggressive strategic growth initiatives globally, and will work closely with the corporate development team engaged in acquisitions, joint ventures, and all non-organic growth of the company.

He has 20 years of global acquisition experience, having worked throughout the US, Europe and Asia. He has worked in investment banking with Citigroup in New York and London, and in a strategy and corporate development role with

European based manufacturer, Vaillant Group. He was most recently a principal of a private equity investment group located in Birmingham and London. He has also been on Michelman's board of directors since 1999.

According to Steve Shifman, Michelman's president and CEO, "Andrew has a proven track record of successfully originating and completing challenging transactions globally in the merger and acquisition space. He possesses significant strategic, commercial, analytical and negotiation skills which align directly with the skills and experience we require for this position."

Thomas Whalen Joins TCI

TCI Powder Coatings (Ellaville, GA), a subsidiary of RPM International Inc., has named Thomas G. Whalen as director of marketing and segment strategy. He brings over 25 years of experience in the industrial coatings market to this new position with TCI.

For the past two years, he was with PPG Industries as the global business director, consumer electronics, and performance glass coatings. Prior to that, he was vice-president of the liquid and mirror coatings units, and led two global businesses with Spraylat, which was acquired by PPG.



Thomas Whalen

Cefla Finishing Appoints Executives

Cefla Finishing Group (Charlotte, NC), which performs finishing, decorating and digital printing for woodworking and other industries, has hired Brent Warren as sales manager. It has also named Massimo Di Russo general manager for both its divisions.



BRENT WARREN

Warren was formerly vice president, sales manager and general manager for the surfaces division of Burkle North America, where he specialized in direct technical sales, project management, contract negotiations and distribution management. He also worked as regional sales manager for Lord Corp., taking responsibility for sales of water-based and UV curable coatings for woodworking companies

calendar of **INDUSTRY EVENTS**

September 15-17, 2015: Aluminum Anodizers Council, Annual Anodizing Conference & Exposition, at Rancho Bernardo Inn, San Diego, CA, www.anodizing.org/?page=annual_conference

September 28-October 1, 2015: Canadian Manufacturing Technology Show (CMTS) 2015, The International Centre, Mississauga, ON, www.cmts.ca

October 5-7, 2015: 2015 Polyurethanes Technical Conference, Gaylord Palms Resort, Orlando, FL, polyurethane.americanchemistry.com/Polyurethanes-Technical-Conference/2015-Conference.html

October 6-7, 2015: Powder Coating & Curing Processes Seminar, Alabama Power's technical Applications Center, Calera, AL, www.ccaiweb.com/event/PCCSemFall2015

October 7-8, 2015: Canada Woodworking West, Tradex, Abbotsford BC, www.CanadaWoodworkingWest.ca

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

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

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

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

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

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



Massimo Di Russo

in North and Central America.

Di Russo's 10-year tenure at Cefla began in 2005 when he was director of operations for Delle Vedove USA (DVS), a manufacturer of molding equipment acquired by Cefla Group. During the merger of DVS into Cefla North America, Di Russo provided strategic leadership, building a new management team. He became chief operating officer for the division in 2011 and vice president in 2012. He became part of Cefla's dental division in 2014.

MacDermid Names Global OEM Manager

MacDermid, which supplies specialty chemicals for surface finishing and related applications, has promoted Glen Breault to global OEM manager. He has over 20 years experience in the automotive industry, mostly with Tier 1 fastener and stamping companies working with GM, Ford and Chrysler. He has held manufacturing, engineering and sales roles, all while establishing strong relationships throughout the automotive supply chain. He joined MacDermid in 2011 and is based out of its New Hudson, MI, office.

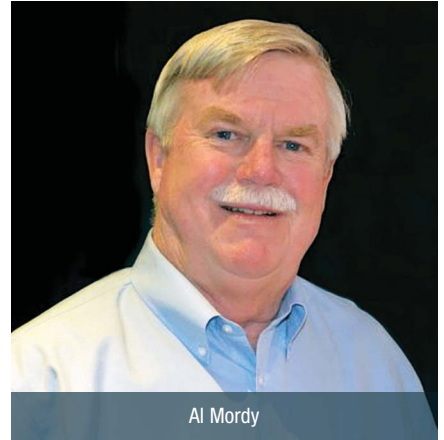
Parker Ionics Names National Sales Manager

David Underhill has joined Parker Ionics (Westland, MI) as its national sales manager. He has a wide-range of expertise in marketing, sales management, dealer relations and industry networking, and has been general manager for a vibrant system integrator, engineering manager for a national equipment manufacturer, a system design and sales expert for a national systems provider, and lead sales engineer for a turnkey finishing systems provider.

Cloverdale President Dies After Brief Illness

Al Mordy, who was president of Cloverdale Paint Inc. (Surrey, BC), died on June 4 after a short illness and ensuing complications. Mordy joined the company in 1976. He was active in several industry-related associations, in both Canada and in the US, where the company had extended its presence in recent years.

Replacing Mordy as CEO is Tim Vogel. Cloverdale Paint has grown into one of North America's largest regional paint and coatings manufacturers and is a wholly-owned Canadian company, and is ranked among the top 20 paint manufacturers in North America.



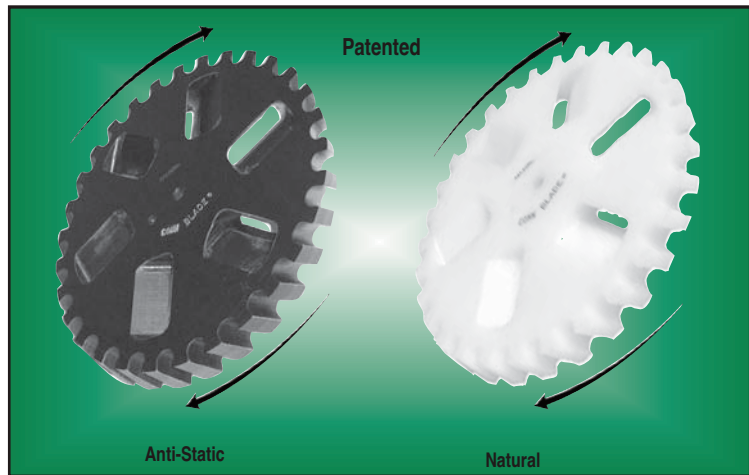
Al Mordy

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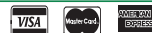
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Inortech Chimie Celebrates a Quarter-century



Jean Marc Pigeon, Amelie Pigeon and France Boisvert welcome over 120 customers, suppliers and friends to 25th Anniversary celebration that included a laboratory tour and lunch in the afternoon and an evening reception and dinner.

The year 1990 was when Brian Mulroney was Prime Minister, nobody had any idea what the internet was, or might be, and the Edmonton Oilers won the Stanley Cup. And in Quebec, Jean-Marc Pigeon decided to start Inortech Chimie Inc. a high-end supplier of specialty chemicals. This year, the company, based in Terrebonne, QC, celebrated its 25th anniversary.

“The joke has always been that he started on a Friday 13,” says national sales manager Jean-Baptiste Moranta. “Obviously, it was lucky for this company.”

Initially, there was just one employee – the boss. But there was constant growth, and when Moranta joined the company six years ago, it had 11 employees. Today, including its four laboratory staff, it has 17.

“The laboratory is a big part of what we’re about,” he says. “We can formulate to meet unusual requests from customers, and we’re always investigating new applications.”

Inortech services some customers in the inks business, and a few in the plastics industry with a need for specialty additives. However, coatings is by far its biggest market segment. And it has customers coast-to-coast across Canada.

“Our strength lies in our ability to focus on formulating outside the box,” Moranta says. “We represent close to 30 suppliers, and we can offer well over 5,000 products from these companies.”

Inortech doesn’t release figures for sales or number of customers, but it continues to grow. It’s confident its second quarter-century will see the growth continue.

As is shown by all the smiling faces in this photo-spread from the anniversary celebration.

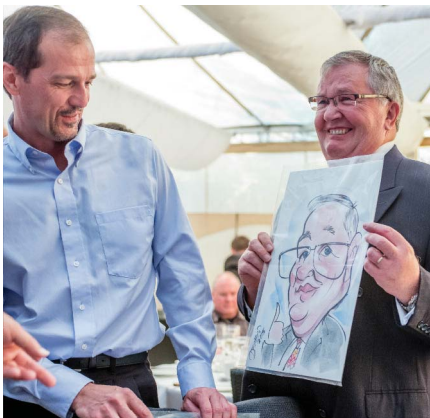






Celebrating a Quarter-century





INORTECH
CHROME INC.

CPCA News

BY GARY LE ROUX

Below is an outline of some of the work done by CPCA over the past several months on important coatings industry-related issues.

Canada's Chemicals Management Plan Moving Forward

The federal government is moving forward on its Chemicals Management Plan (CMP), assessing all substances in commerce that have not been assessed in the first and second phases of the plan. As in the past, CPCA continues to be very active on this and engaged with our technical committee members, to ensure member companies are fully informed of paint-related initiatives as we move forward. Our goal is to ensure that all members have direct input on the various assessments of substances they use in their business.

If this is not done important substances might be banned or end up with regulations or other risk control instruments that will effectively make it difficult for manufacturers to use them in formulations; or in the case of suppliers, to provide them to their customers. This could lead to a loss of business or the need to seek out more costly substitutes that drive up the overall cost and/or performance of products. So, we need to remain vigilant on this front or suffer the consequences.

As in the past the federal government, namely Environment Canada and Health Canada, seeks to ensure they fully engage with industry to obtain the relevant data to make accurate assessments of chemicals in use. There are a number of important meetings planned on an 'invite-only basis' in the coming weeks and CPCA's Paint and Coatings Working Group, which focuses on a sector approach on the CMP, will be very active in this forum and others. These meetings will solicit stakeholder input to inform the work on the Chemicals Management Plan; articulate a common understanding and evaluate substance groupings and the related short, medium and long-term approaches for assessment going forward; and, to listen and discuss stakeholder ideas, suggestions and views on the future of the Chemicals Management Plan in Canada.

Environment Canada Tests Architectural Coatings Compliance

The first-ever VOC regulations for paint and coatings in Canada were passed in 2009 under the Canadian Environmental Protection Act (CEPA 1999). These were regulations for all categories of coatings for the architectural and automotive refinish sector. New federal regulations must undergo a mandatory evaluation of performance after five years of their coming into force. The performance management evaluation exercise was initiated in late 2014.

Since 2009 CPCA has worked with Environment Canada on compliance promotion to ensure industry was fully aware of the need to be compliant. CPCA recently met with representatives of Environment Canada to discuss preliminary results of this evaluation, which are only preliminary but appear generally positive for the industry. CPCA continues to promote full compliance with the current VOC regulations.

CPCA issued a special bulletin on the preliminary compliance results, which can be seen in the 'Members Only' section of CPCA's website. Environment Canada's intent is to formally present and discuss these results with CPCA's members at the next Paint and Coatings Working Group, planned for December 2015.

The performance management evaluation exercise consisted of two phases: a) theoretical assessment of VOC emission reductions via a non-mandatory survey of products from 10 high-volume paint categories sold on the Canadian market during 2014; and b) a random sampling and testing campaign of selected paint products on store shelves to determine the compliance rate among paint manufacturing companies. The theoretical assessment was done by a professional consulting firm that consulted with 46 paint manufacturers. The respondents covered 77 percent of the Canadian market.

Environment Canada's accredited VOC laboratories in Ottawa-Gatineau tested the randomly selected samples. A total of 37 samples will be analyzed, with 27 having already completed. This represents roughly four different paint samples for each of the 10 categories. All test results will be available late this year, or early next year.

Environment Canada's focus was on the following 10 high volume paint categories:

- Any other industrial maintenance coating (#25) 340 g/L;
- Any other varnish (#33) 350;
- Waterproofing sealer for concrete or masonry (#40) 400;
- Any other waterproofing sealer (#41) 250;
- Any other primer, sealer or undercoater (#42) 200;
- Rust preventive coating (#45) 400;
- Traffic marking coating (#50) 450;
- Any flat coating (#51) 100;
- Any non-flat coating (#52) 150; and
- Any high-gloss coating (#53) 250.

Environment Canada officials are required to provide current VOC test results to the Enforcement Branch for any products not meeting the VOC limits: that is, not in compliance. The Enforcement Branch has its own agenda and priorities, but eventually they will address any non-compliance issues and contact each individual paint manufacturer implicated for non-compliance.

Architectural paint manufacturers of all solvent borne products remaining on the Canadian market within the 10 categories must remain vigilant, review their product offerings, and ensure a 100 per cent compliance rate. This means restricting access to consumers of 'professional-only' or 'shop-applied' paint products meant for use in a controlled setting only. It could also mean having stricter controls in place to prevent non-compliant architectural and industrial maintenance paint brands from crossing the Canadian border.

Chemicals Management Plan Stakeholder Advisory Council summary report

It is important for industry to remember that civil society comprised of non-governmental organizations (NGOs) and the public generally are watching the progress of how industry is dealing with chemicals used in the course of their respective businesses. CPCA sits at the table when these discussions occur, to help communicate what the coatings industry is doing to both provide input on risk assessments and show how we have complied with regulations now and will in future.

It is critical that industry continues the dialogue with important public interests.

Environment Canada recently released a report on proceedings of a meeting of the CMP Stakeholder Advisory Council. The council is comprised of industry associations, NGO organizations and government officials, who meet twice a year to share information on the ongoing progress related to chemicals management.

Three key areas requiring additional work highlighted at the multi-stakeholder meeting on the Chemicals Management Plan (CMP) were shared with Stakeholder Advisory Council (SAC) members. These are: a) the need for additional analysis on the chemicals and sectors involved in the upcoming third phase of the CMP; b) the need to enhance public outreach and communications on the CMP and its outcomes. Government officials are asking SAC members to reach out to their constituents and provide feedback on this particular item. It was suggested that the SAC could be used as a sounding board for public outreach products and strategies; and c) the need for communication on risk management approaches for the next phase of the CMP.

A discussion on the need to improve public

outreach and communications took place. SAC members acknowledged the importance of improved communications to the public on chemicals management. Some members raised the importance of their responsibility in communicating back to constituents as they are well placed to engage in that dialogue. Others highlighted the limited resources at their disposal, the need to find ways to support increased engagement for non-governmental organizations, and the need to reach out beyond the current engaged stakeholders.

TDG Issues with Imported IBCs

A Canadian importer received a 'Stop Sales' order from an inspector for a dangerous good (DG) that was received in IBC from a foreign supplier. Now what happens? Here are some points to remember when importing any dangerous goods from foreign suppliers:

- Ensure that offshore suppliers are using the correct UN specification containers for all dangerous goods shipped to Canada;

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

Value-Added Membership

As the recognized voice of the paint and coatings industry in Canada, CPCA has been dedicated to taking collective action for more than 100 years. Consider just a few of the issues before the industry:

Globally Harmonized System for Labeling

How much will proposed new labeling regime for chemicals in the workplace cost you and how can it be reduced?

Low-level VOC Emissions

Will your products survive further reductions in VOC limits and still perform and sustain your business over the long term?

Chemicals Management

Are you aware of the current, ongoing assessment of the chemicals used in your products with new risk management actions required for many? Are your products compliant and do you care about which products might be banned or regulated in future and how that will be done?

Product Stewardship and Sustainability

Are you compliant with stewardship regulations and do you want to help shape the future of new regulations imposed by government on your business?

Top 3 Reasons to Join

- 1 Know what is being done to your business now, not after the fact
- 2 Take action and provide input to ensure your business can grow and prosper
- 3 Share the responsibility to counter measures that threaten your paint and coatings business and future trade

Stronger Together: CPCA provides the strength, commitment and resources to help you get informed, stay connected and sustain your business.



www.canpaint.com/membership

CBSA Updates its 2015 Trade Verification/Audit Targets

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

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

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

Stakeholder Workshop on DSL Nano Substances Coming in the Fall

CPCA recently received notice from federal government officials that the existing nanomaterials on the Domestic Substances List (DSL) Stakeholder Workshop, originally planned for June/July 2015, was postponed to sometime after the federal election. At that workshop, officials intend to present their final thinking regarding their approach to existing nanomaterials on the DSL.

A preliminary agenda will be developed in August and September and discussed with industry prior to the workshop, where industry may be asked to contribute. CPCA has submitted formal comments on this issue based on feedback from members. CPCA submitted comments to Environment Canada supporting the

ICG/ACC views on the consultation document for the DSL nano approach. A copy of the letter is available in the 'Members Only' section of the CPCA website.

GHS Reminder on Important Information for Industry

Health Canada reminds CPCA members of the importance of filing claims for exemption to protect confidential business information (CBI) during the transition to WHMIS 2015. This information states that for a certain time period, suppliers and employers making claims for exemption may file claims with (M)SDS(s) and use labels complying with either WHMIS 1988 or WHMIS 2015.

However, industry must consider the fact that: a) as of June 1, 2016, Health Canada will only accept supplier claims under the HMIRA with WHMIS 2015 (GHS) Safety Data Sheets (SDSs); and b) as of December 2017, Health Canada will only accept employer claims with WHMIS 2015 (GHS) SDSs and labels. The CBI claim must be renewed every three years at what is currently a significant cost (CBI claims' cost per brand is \$1,800, plus a renewable cost of \$1,400 every three years).

CPCA is seeking specific examples of issues for their companies related to the use of true concentration or true concentration ranges, and the overall cost of filing CBI claims. All individual company cost impact information will be compiled and aggregated results will be provided to Health Canada.

Health Canada has said that the detailed information provided by CPCA on several outstanding 'real operational' issues impacting the implementation of the new GHS regulations was the most helpful in coming up with the most current guidance materials provided to industry in July. Government continues to seek further guidance as to the real-life impact on operations of the uses of concentration and concentration ranges in mixtures and batch-to-batch discrepancy situations as well as variances with prevailing CBI protection mechanisms in the United States. CPCA has committed to provide additional details that will help further clarify guidance during the current consultation period, which ends on October 19. This will hopefully resolve any and all misunderstanding with respect to clarity in the language used in the guidance.

Publication of RCC Chemicals Management Work Plans and Regulatory Partnership Statement

The Regulatory Cooperation Council (RCC) Chemicals Management work plans and a Regulatory Partnership Statement have been posted. The scope of the work to be undertaken under this Regulatory Partnership will vary over time, depending on the agencies' respective needs and priorities and the views of stakeholders, but will center on work that will support chemical risk assessment including, but not limited to, areas such as:

- information gathering
- information sharing
- technical work-sharing
- scientific collaboration
- international collaboration
- risk assessment methodology

Two Multi-stakeholder Technical Working Groups have been established to contribute to the implementation of each one of the two main initiatives within the work plan—Risk Assessment and SNAC/SNURs—and are continuing to develop background information and analyses to support working group discussions.

RCC Chemicals Update: Significant New Activity Provisions (SNACs)/Significant New Use Rules (SNURs) Work Plan

The SNAC/SNUR work plan has two components, both of which began in April 2015 and will end in January 2017: a) comparative analysis and identification of alignment opportunities for SNACs and SNURs; and b) identification of compliance challenges and best practices for compliance promotion and sharing information on SNACs and SNURs throughout the supply chain.

For the first component, the comparative analysis of the legislative backdrop and development process for SNACs and SNURs has been completed. Stakeholder interviews have been undertaken to compile information on areas of significant differences and similarities between SNACs and SNURs and challenges in complying with SNAC and SNUR requirements. A number of CPCA members participated in these interviews for the paint sector and will participate in further multi-stakeholder meetings via the Technical Working Group (TWG), which was launched to discuss potential alignment opportunities for the

development and design of SNACs and SNURs.

A study has been initiated to compile background information on best practices for sharing chemical information throughout the supply chain and current approaches to compliance with SNACs and SNURs. As part of this study, two roundtables will be held (in Washington and Toronto) to solicit input from working group members and other stakeholders in various parts of the supply chain. CPCA will be attending the next meeting to ensure that all concerns expressed by members are tabled.

CPCA Reminds HS&E Committee Members about Recent TDG Amendment

The Regulations Amending the Transportation of Dangerous Goods Regulations, Part 8, Reporting Requirements was published in Part 1 of the Canada Gazette on June 6, 2015. CPCA prepared and sent a summary of this regulation to Health, Safety & Environment committee members. This proposed amendment includes the following:

- New definition of release;
- Amendments to the reporting requirements to introduce circumstances under which a report is required;
- Exceptions where the reporting obligations do not apply;
- The reporting of the loss or theft of dangerous goods;
- The reporting of unlawful interference with dangerous goods; and
- New reporting criteria for misdeclared or undeclared dangerous goods to harmonize with International Civil Aviation Organisation (ICAO) reporting requirements.

Although the public consultation comment period expired as of July 6, if issues remain for industry they should make every effort to raise those issues with government as soon as possible.

Community of Federal Regulators (CFR) Workshop on Web Renewal

The Government of Canada web presence is undergoing the most major transformation in its history. The primary objective of web renewal is to provide a unified, user-centric experience for citizens and industry through Canada.ca.

The purpose of the workshop held on July 28 was to generate a common understanding of what regulatory guidance is, better understand

how regulatory guidance is used by business, and have public servants and external stakeholders co-create possible solutions. This will support the development of presentation templates and discovery patterns that will improve the consistency, discovery and usability of regulatory guidance information across the Canada.ca website.

CPCA Summarizes Fourth Chemicals Management Plan Progress Report

The fourth issue of the Chemicals Management Plan (CMP) Progress Report covers activities between December 2014 and May 2015. Members can consult this bulletin in the Members Only section of the CPCA website. It is important to gauge progress or the lack thereof when it comes to government actions that will, not may, impact the paint and coatings sector in Canada.

The report, jointly produced by Environment Canada and Health Canada, gives, among other updates, the latest developments on CMP-2 and CMP-3 as the pace picks up for Phase Three of the Chemicals Management Plan. CMP-3 will focus on the polymer approach and the hundreds of polymers that will be impacted, many of which are used in the paint and coatings industry.

A recent workshop held on CMP-3 priorities the government released a detailed database of the CMP-3 substances. CPCA participated in this meeting and has provided members with information on this database and what needs to be done on this matter in the coming months such as suggestions on grouping chemicals into functional groups, and the possible inclusion of sectoral groupings for adhesives and sealants and paint and coatings, such as common polymers or substances. Another CMP Multi-Stakeholder Workshop will be organized before year-end and much work will need to be done in preparation.

New Program Operator for Post-consumer Paint in Ontario

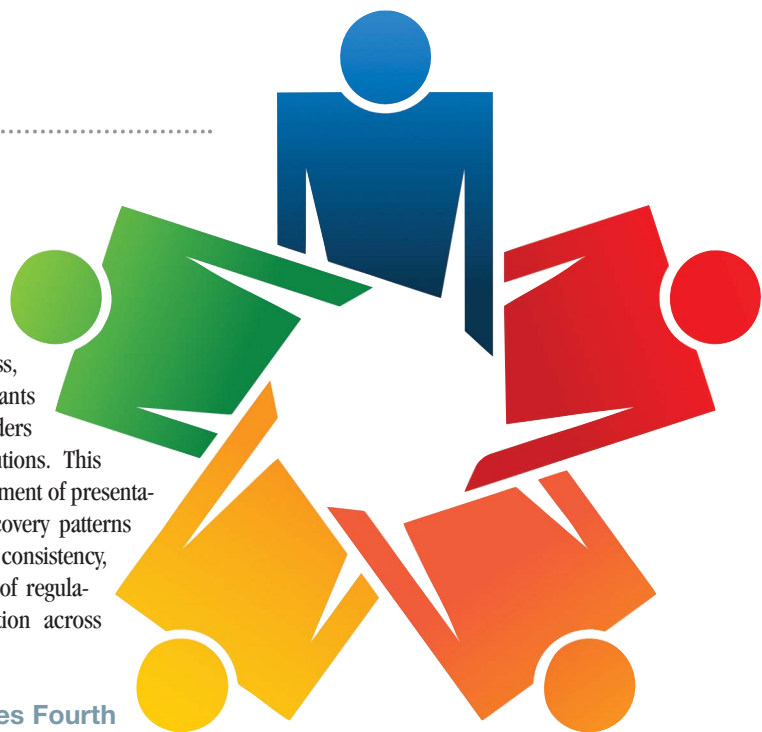
To date, 99 percent of paint stewards in Ontario have joined the paint and coatings Industry Stewardship Plan and signed the agreement.

Product Care has reassured all service providers, municipalities and 'return to retail' networks of a smooth transition from Stewardship Ontario to Product Care. There will be no change by PCA of all current transportation and processing incentive rates for depot-collected paint. Product Care (rebranded as ReGeneration) intends to look at improved efficiency in the whole system at a later date. In collaboration with the Canadian Paint and Coatings Association (CPCA), PCA submitted an initial program plan for the collection and recycling of paint and coatings to WDO in September 2013. The plan was revised in consultation with WDO, after extensive consultations with municipal governments, transporters, recycling service providers and other stakeholders.

ACA and CPCA Send Joint Letter to Environment Canada to Support the Addition of AMP-TBAC-DMC-PC to the VOC-Exempt List under Schedule I of CEPA

ACA and CPCA fully supported the addition of these four substances to the VOC-exempt list and asked again for a speedier process to be established that would better coordinate with U.S. EPA initiatives with regards to VOC-exemptions. The submission is available for download in the Members Only section of the CPCA website. ■

Gary LeRoux is the president and CEO of the Canadian Paint and Coatings Association.



The CPCA 102nd Annual Conference

The CPCA 102nd Annual Conference was held May 27-29th at The Pillar and Post in Niagara on the Lake. The conference began Wednesday with an evening casual reception followed by a full day of presentations Thursday with the Annual Chairs Dinner and Awards. The Friday social day offered the choice of golf or winery tours.



Tim Vogel, CPCA Chair welcomes participants.



Gary Leroux, CPCA President outlines the CPCA Strategic Plan to better serve the industry.



Jane Sadler Richards, Network for Business Sustainability offer 7 Opportunities for Canadian Business.



Mike Moffatt, Richard Ivey School of Business, covered the Industry Economic Outlook.



Jean Duhamel, Institute for Polymer Research, University of Waterloo spoke on Coatings Innovation.





Mary Cummins, Waste Diversion Ontario.



Joyce Borkhoff, Intertek, forecast future regulations.



Mark Kurscher, Product Care Waste Diversion Ontario.



Maria Papoutsis, Ontario Ministry of Labour.



Daniel Wolfish, Health Canada.



Lydia Roy, Star Coating International presented Building Resilient People, Organizations and Leaders.



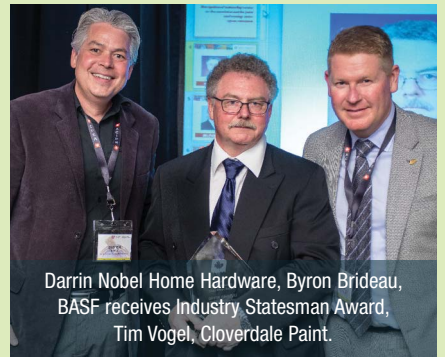
Tim Vogel, welcomes people to the Chairs Dinner.



Dominique Plot-Swat, receives an award to BASF for 150 years in business.



Jean-Marc Pigeon, Inortech Chimie, is recognized for 25 years in business.



Darrin Nobel Home Hardware, Byron Brideau, BASF receives Industry Statesman Award, Tim Vogel, Cloverdale Paint.



Brian Edwards, DuPont Coatings receives Industry Statesman Award.



Ian Goodwin, Huntsman Tioxide Canada receives Industry Statesman Award.



Andy Bethea, Celanese accepts Industry Statesman Award for Martin Menard.



Robert Fierheller, PPG, Industry Achievement Award.



Jim Leamen, L.V. Lomas, Industry Achievement Award.



Doug Parsons, Home Hardware, Industry Achievement Award.



Mark Kurschner, Product Care, The Roy Kennedy, Outstanding Achievement Award.



Pushing the Envelope with **Flame Retardants**

Flame retardants (FRs) have moved into an increasing range of industrial areas in recent years. Safety rules, such as building legislation for an increasingly wired world, where there's a greater chance of short circuits or overheating through expanded use of plastic conduits, fixtures or insulation, are pushing the envelope, along with the usual pace of technical advances.

The most popular earlier chemistries, the halogen-based FRs, have undergone multiple developments or have been eliminated due to health concerns. Suppliers to this market have, therefore, been forced to balance safety in one area – preventing or slowing fires – against issues of bio-disruption, or persistency in the general environment. Not to mention aggressive media headlines that follow from any new research that identifies, or claims to identify, a fresh possibility of harm.

"We don't have any environmental issues with any of our products, as this has always been a focus of our company," says Tony LaGrange, president of Quantum Chemical Co. (St. Albert, AB). "With VOC regulation changes a few years ago, we re-formulated our SafeCoat Clear Fire Retardant for architectural wood, as the VOCs exceeded new regulation requirements. Quantum's new SafeCoat Clear has zero VOCs."

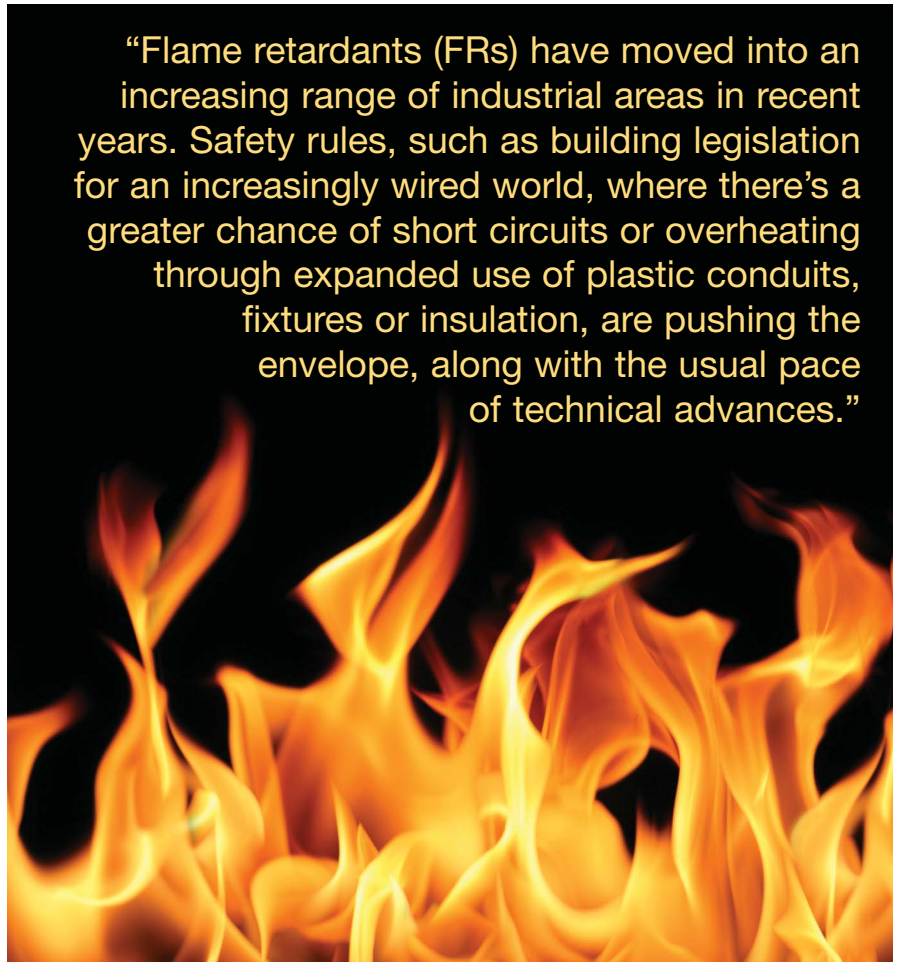
The company, he adds, is presently working on a completely new clear system. This is in the research and testing stage that will satisfy additional requirements customers are looking for.

"We're expecting to launch in 2016," LaGrange says. "In Canada, particularly BC, the use of natural woods in projects is a definite preference of architects – but not always code officials. Quantum intends to satisfy both."

The company recently increased the size of its facility by one-third, largely to expand the research and development laboratory. It also added new fire test equipment, notably a new test furnace room and test furnace for testing to the UL 1709 and ASTM E119/CAN ULC-S101, plus a Cone Calorimeter to run the ASTM E1354.

"This will enable us to cost-effectively do

"Flame retardants (FRs) have moved into an increasing range of industrial areas in recent years. Safety rules, such as building legislation for an increasingly wired world, where there's a greater chance of short circuits or overheating through expanded use of plastic conduits, fixtures or insulation, are pushing the envelope, along with the usual pace of technical advances."



unlimited preliminary fire testing of our products for research purposes for both Quantum and our customers," adds LaGrange. "Quantum is also involved in a joint research venture with the University of British Columbia in understanding and improving the mechanisms of intumescent coatings."

Intumescent coatings have formed a significant growth area in flame retardants in the past 10 to 15 years. They swell when exposed to heat, which means their primary application is therefore in passive fire protection.

Although the basic aspects of intumescence such as the chemical components, thermal and rheological aspects are well-known, computer

modeling and simulation of these systems is relatively new. Additionally, the traditional chemical compositions are seeing competition from novel systems based on nanotechnology and synergistic processes.

They are being used in coatings for metals, steel, wood and plastics as well as for coatings deposited on fabrics, films and foams through layer-by-layer assembly.

In the field of halogen-free FR materials, Huber Engineered Materials (HEM), a division of J.M. Huber Corp., announced in June that it had acquired the Safire nitrogen and phosphorus halogen-free fire retardant technology from Floridienne Group and Catena Additives, a 100-

Better protection. Safer chemistry.

Get greener, safer
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paint & coatings manufacturing: **FLAME RETARDANTS**



Testing a flame-retardant formulation

(Photo: Inortech)

percent owned subsidiary of Floridienne. Huber's stated goal is to take the patented Safire technology, integrate it within its existing halogen-free portfolio of flame retardants and smoke suppressants, and rapidly develop a line of commercial products.

"The addition of the Safire technology is another exciting step in the ongoing growth of Huber's Fire Retardant Additive business, as we continue to strengthen our array of halogen-free flame retardant offerings," said Jerry Bertram, vice-president and general manager of Huber's Fire Retardant Additives business unit. "This acquisition gives Huber the opportunity to work in a new category with nitrogen and phosphorus flame retardants, and we believe the synergistic benefits and value between Safire and many of our current products will be advantageous for customers."

The Safire technology addition marks the third acquisition over the past five years for Huber's growing Fire Retardant Additives business, following its 2012 purchase of the specialty hydrate flame retardant business from Almatix and the 2010 acquisition of the Kemgard flame retardant and smoke suppressant business from Sherwin-Williams.

"We look forward to working with companies who've expressed an interest in the Safire technology along with introducing it to those who aren't as familiar with it," Bertram added. "Our plan is to develop a full complement of halogen-free products that meet the most demanding fire retardant requirements our customers are facing."

Another acquisition this year in the intumescent field was the purchase of Firetherm Intumescent & Insulation Supplies Ltd. by RPM International Inc. (Medina, OH). The sale was made to RPM's subsidiary, tremco illbruck Group.

"Firetherm, with its high degree of fire-stopping technical expertise, is a good strategic fit with our tremco illbruck Group and its existing Nullifire intumescent coatings business," explained RPM CEO Frank C. Sullivan. "The acquisition expands tremco illbruck's product range and capabilities for fire-stopping products and propels it to the leading position for passive fire protection in the UK. We expect to grow Firetherm in the UK and internationally by leveraging its products across the tremco illbruck distribution network."

Firetherm's primary market area is construction products. Until now, it has mainly sold to specialist fire-stopping contractors, general contractors and home builders. With a large, new owner, that will change. ■

Mineral Fillers

– it's all in the selection

Mineral fillers can be the wild cards in the formulating process. The fact they come out of the ground rather than a reactor means they need to be selected with great attention to the specific end-use, and any substitutes need to be trialled carefully before being used in an established formula.

Every mine that's operating will have some variations in chemical composition, purity and aspect ratio from any other. And a good minerals distributor is always willing to work patiently with customers to find satisfactory substitutes when one product is no longer available, or has gone up in price because of scarcity or other issues in the supply chain.

Fillers are also paradoxical in that they are usually very simple, inorganic compounds, yet they have to perform multiple tasks. Some are needed for viscosity purposes as well as for use as optical brighteners or pigment extenders. And so on.

In other words, if you are thinking about changing a formula you have to shop around.

One example is the products coming from Trinity Resources' pyrophyllite (aluminum silicate hydroxide) mine not far from St. Johns, NE. The company's Altplus and Altbright products are, it says, versatile, bright, multifunctional mineral pigments, and ideal for architectural and industrial water-based and solvent-based paints and primers. And it asserts they improve the mechanical and optical properties of formulations they're used in, as well as the production processes.

Trinity's facility has the capacity to mine, mill and classify up 50,000 metric tons per year and has the technology, the company says, to remove any impurities from the ore. This advanced technology allows it to offer products with a range of d50 microns from two up to 20. Last year, the company introduced sub-micron products as well.

As an extremely bright mineral (95 dry), Trinity's product has successfully replaced talc and calcined kaolin clay in various coatings applications.

Recently, Unimin Corp. (New Canaan, CT) has had success with its Minex nepheline syen-

ite, offered as a versatile mineral extender. A silica-deficient sodium-potassium aluminosilicate, the alkali ions in Minex are chemically fixed in the crystal lattice, so that it contains less than one tenth of one percent of free crystalline silica. This can be a critical element in employee safety.

With low oil absorption, reportedly excellent tint strength and a negative surface charge, this mineral is easily dispersed in both water and solvent systems and will optimize the color development and tint retention of premium architectural paints. Also, it adds durability in a wide range of coatings including 100 percent acrylics, higher PVC vinyl acrylics, styrene acrylics, and VAE emulsion paints.

When incorporated in the coating matrix, Minex extenders help protect a resin system from sunlight's UV attack for improved binder stability and longer service life. The low refractive index is best utilized in clear and transparent systems where improved durability, light stability and resistance to moisture are required.

Wood and furniture formulations can be loaded to 15 to 20 percent solids without exces-

sive haze, to improve abrasion and scratch resistance. Curing and adhesion in UV cured applications are also improved.

Minex is nearly transparent to ultraviolet light and will not inhibit UV activation of the resin or final cross-linking reactions. Finer particle size grades are suitable for higher gloss systems as well as for powder coatings.

CR Minerals Co. (Ohkay Owingeh, NM), mines pumice and SafSil, an amorphous silica. Represented in Canada by Dempsey Corp., CR Minerals offers SafSil as a material with less than 0.1 percent respirable silica, which minimizes the risk of silicosis when it's employed in a formulation.

It can replace ground silica, nepheline syenite, calcium carbonate, and talc. And it can be employed in both water and solvent borne systems.

All grades feature a specific gravity of 2.34, and a refractive index of 1.5. The pH is nine, at a 10 percent solution in water. The typical analysis is 73 percent silicon dioxide, 12 percent aluminum oxide, and the balance being made up of oxides of potassium, sodium magnesium, titanium, iron and calcium. ■



Mining pyrophyllite at Trinity Resources' site in Newfoundland.

Progress on Chemicals Management in Canada

BY GARY LEROUX

The fourth and most recent issue of the federal government's Chemicals Management Plan (CMP) Progress Report was released in the spring of 2015. It covers activities between December 2014 and May 2015. The report is produced jointly by Environment Canada and Health Canada.

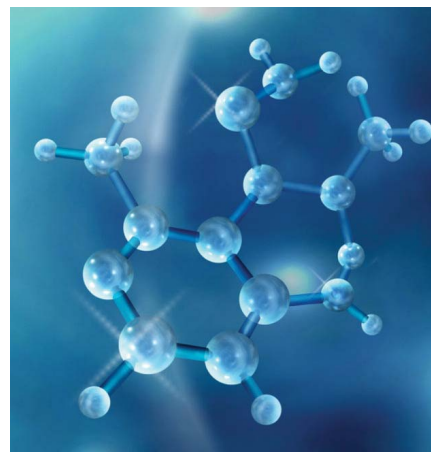
It does show that industry, working closely and collaboratively with the federal government, is making great strides in assessing chemicals in commerce to ensure they are properly managed for the benefit of business, consumers, workers and the public generally. This article is an effort to get caught up on where things stand today. It should be noted that CPCA's Paint and Coatings Working Group (PCWG), which met with Environment Canada throughout this period, is moving forward on several fronts related to those discussions and looks forward to a day long meeting of the Group in early November of this year.

With respect to the substance grouping initiative, plans are firmly in place to address these substances. This remains a worthwhile undertaking because grouping substances exhibiting similar characteristics helps limit data collection to some extent and expedites the process as well as the strain on those collecting the data, on both the government and industry side of the equation. The Final Screening Assessment Reports (FSAR) for aromatic azo- and benzidine-based substances have been published for 129 of the 358 substances implicated. The assessments for the remaining substances, monoazo pigments and solvent dyes, aromatic amines and azo basic dyes, azo disperse dyes and azo acid dyes, are expected to be published in the coming months. The FSAR for Certain Monoazo Pigments and Azo Solvent Dyes was published in the Spring 2015.

The FSAR for methylenediphenyl diisocyanate and diamine (MDI/MDA) substances is

expected in fall 2015. D-I-Y two-component spray polyurethane foam insulation products containing MDIs are the main target for risk management. Since MDA substances are recognized for their high human health hazard and toxicity to aquatic organisms, there is a concern that new activities which have not been identified or assessed could lead to MDAs meeting the criteria set out in section 64 of the Canadian Environmental Protection Act (CEPA). Therefore, pending further investigation, the Government of Canada may consider amending the Domestic Substances List of the Act, to indicate that Significant New Activity (SNAC) provisions apply with respect to two-component spray polyurethane foam so that the government is notified of significant new manufacturing, import or use involving these substances and undertakes ecological and human health risk assessments before such activities occur.

The FSAR for cobalt-containing substances is expected in winter 2016. The Draft Screening Assessment Report (DSAR) published on December 6, 2014, reported on the use of cobalt compounds in paints and coatings, as well as adhesives and sealants. Specific concern was not identified for any of those uses. Consequently, actions are not being proposed in the Risk Management (RM) Scope for adhesive and sealants or paints and coatings. However, the DSAR concluded that all compounds in the grouping meet the criteria under paragraph 64(a) of CEPA 1999 as they are "entering or may enter the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity." The current focus is on base metals smelting and refining facilities, pulp and paper and wastewaters/waste management facilities for their releases of cobalt compounds in effluents, as all substances may



lead to releases in the environment.

The State of the Science Reports and Proposed Cumulative Risk Assessment Approach documents were published this past summer for phthalates and CPCA is monitoring this effort closely. Other groupings of DSAR for certain organic flame retardants, boron-containing substances and substituted diphenylamines are expected in the fall of 2015. The paint industry may indeed be using some substances contained in certain organic flame retardant groupings and CPCA is engaged in a process to determine the extent to which this is the case as it may have some impact on member companies.

The Draft Screening Assessment for the Petroleum Sector Stream Approach – Stream 4, related to petroleum and waxes, was published on March 7, 2015, and proposed that these substances are not harmful to human health or the environment at current levels of exposure. A mandated section 71 survey for Stream 2 substances will be launched soon. Environment Canada has shared with CPCA a list of Stream 2 substances launched this past summer.

Prior to the launch, Environment Canada shared with CPCA the list of Stream 2 substances for early engagement by paint and coatings industry members of CPCA, and work continues on this file for the companies implicated. The

FSAR and Risk Management Approach for Fuel Oils No. 2 was published in February 2015. This substance was determined to be harmful to the environment. The government will focus on practices and technologies available for reducing the occurrence and impact of spills. This will include the proposed addition of Fuel Oil No. 2 to the Environmental Emergency Regulations under the Canadian Environmental Protection Act, 1999.

From December 1, 2014 to May 31, 2015, the New Substances Program assessed 299 notifications prior to their introduction into the Canadian marketplace. Of these, 261 were for chemicals and polymer substances, one was for a substance that fell within the nanoscale, 14 were for living organisms and 23 were for substances regulated under the Food and Drugs Act. In that time period, 95 substances were added to the Domestic Substances List – 47 to the public portion and 48 to the confidential portion. Six new summaries for new chemicals and polymer substances were planned for July 2015. These summaries cover substances for which the risk assessment has been completed and a restriction has been imposed and published in the Canada Gazette.

For Phase 3 of CMP, the final Polymer Approach document was published on December 19, 2014. The DSAR for approximately 330 polymers identified as not being in commerce in quantities of more than 1,000 kg/yr in 2011 was published on February 28, 2015. The final rapid screening assessment for these polymers is targeted for publication by the end of March 2016. A consultation with stakeholders began in February 2015 to obtain information on certain polymers to support risk assessment activities under the government's detailed Polymer Approach. The launch of the Section 71 Survey for the remaining polymers of concern was published in July 2015 for a four-month reporting period. It should be noted that the paint and coatings industry is widely implicated with respect to polymers, including the adhesive and sealant sector of the industry. A CMP Multi-Stakeholder Workshop was held on May 6 to identify CMP-3 priorities. The Government released a detailed database of the CMP-3 substances to be shared with industry. CPCA participated in this workshop and subsequent meetings have been planned.

Another area worthy of note was the proposed Regulations Amending the Prohibition of Certain Toxic Substances Regulations (2012)

adding five substances or groups of substances: PFOS, PBDEs, PFOA, Long-Chain PFCAs and HBCD, and published in April 2015, for which the comment period has now ended. A Review of Significant New Activity Orders has been initiated, given that it will have an impact on all industry sectors.

The review is being undertaken by grouping Significant New Activity Orders or notices by

either 'substance type' or by the type of 'new activities' described. The review continues until 2017. The targeted groups are aromatic azo- and benzidine-based substances; nanomaterials; new and existing substances with consumer product wording; substances with effects of concern (not in commerce); and remaining new and existing substances. With respect to the challenge for industry, the proposed Code of

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CHEMICALS MANAGEMENT

Practice for DEGME for indoor consumer surface coatings was published in May 2015. The Code of Practice (CoP), which sets a maximum total concentration limit of 1.0 percent, will come into effect when the final Code of Practice is published. This will be the second voluntary code created for the paint and coatings sector, the first one was published last year for 2-butanone oxime (MEKO).

A proposed approach to address nanoscale forms of substances on the Domestic Substances List was published in February 2015. Comments were provided by the ICG (Industry Coordinating Group), which were supported by CPCA. The Section 71 survey on nanomaterials was launched in July 2015 with a reporting period ending in winter 2016. This will provide a baseline of information on the current commercial activity of about 200 nanomaterials in Canada, as well as inform the overall approach to existing nanomaterials.

There are also other important initiatives such as the fourth session of the International Conference on Chemicals Management, to be held in September 2015. Major topics to be discussed include the overall orientation and guidance towards the 2020 goal, as well as preliminary discussions on the path forward after 2020, a proposal for a voluntary program to share information on chemicals in products, the addition of 'environmentally persistent pharmaceutical pollutants' as an emerging policy issue, and an increased focus on pesticides.

The final work plan for activities under the Canada-US Regulatory Cooperation Council's Chemicals Management collaboration was published in May 2015. This work plan has two separate initiatives, which focus on regulatory reporting requirements for new uses of chemicals, that is, Significant New Activity provisions in Canada and Significant New Use Rules in the US, and chemical risk assessment. Two multi-stakeholder technical working groups have been launched to contribute to work plan outcomes and recommendations. Three CPCA representatives participated in interviews with respect to the SNAC-SNUR comparative assessment.

As part of the risk assessment initiative, a list of common forward-assessment priorities for the two countries has been developed. A subset of that list will be used as case studies to inform working group discussions and develop an assessment collaboration framework.

There is much activity on the assessment of chemicals in commerce in Canada and CPCA remains at the forefront of ongoing deliberations. Our members are an integral part of consultations with government officials and have been commended by government for their important contribution.

There are many discussions to come for the paint and coatings industry on chemicals management. These discussions and exchange of information will ensure there is effective input on the risk assessments and risk management proposals being considered. In turn, this will ensure proper regulations or risk control instruments are put in place for industry. This is critical to ensure that whatever instrument is used to manage risk associated with substances, it is done in a manner that does not unduly impair the ongoing business of paint and coatings companies operating in Canada. At the same time, industry has proven that it is mindful of the importance of regulatory compliance. ■

Gary LeRoux is the president & CEO of the Canadian Paint and Coatings Association.

Dempsey Corporation

Cross Canada Plastics and Coatings Seminar, Toronto



Dempsey Corporation finished its cross-Canada Plastics and Coatings Seminar for customers in Toronto on Friday, June 19. The all-day seminar include talks by BYK on High Performance Wax Additives, Pigment Wetting and Dispersion, Surface and Defoaming. Dempsey presented Fire Retardants. DSM presented 1 K Resin Systems for Metal Coatings, Industrial Wood and Plastics Coatings, Resins for 2K solvent and Water Based Coating. ICL/Halox covered High Performance Corrosion Inhibitors. Silberline spoke about Aluminum Pigments.



Marc Gagnon, Dempsey Corp.



Carol Traister, Byk.



Nathan Kofira, ICL.



Stuart Lipskin, Byk.



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Powder coating color change gets **FASTER**

The market for quick color change systems in powder coating is transforming under the impact of more capable software and more precisely designed equipment. While the basic methods and concepts of the process are now well established, there's considerable creativity coming into the industry, with even established systems seeing significant evolutionary improvements. And this is paying off for Canadian powder coaters.

"Overall we see the Canadian market showing signs of improvement," comments Jeff Hale, North America marketing director with Gema USA Inc. (Indianapolis, IN). "The weaker Canadian dollar improves the attractiveness of Canadian manufacturing to the US market, which in turn leads Canadian manufacturers to invest in new technology. We continue to be encouraged on the strength of the market and see many manufacturers choosing to invest in powder coating systems.

"Our feedback indicates that many of these manufacturing companies are experiencing expansion within their specific industry, while others are making investments in capital equipment to improve quality and competitiveness. Regardless, every Canadian company is being challenged to meet the demand for higher efficiency and performance from their existing processes."

A significant focus for Gema recently has been its OptiSpray AP01



Exel's SAMES system offers low powder flow with high electrostatic effect.

application pump. This unit uses Smart Inline Technology that is packaged into the OptiCenter color management system.

"It provides very tight control of powder delivery and offers simplicity of cleaning during color changes," Hale says. "Most important is the repeatability of the process. Application consistency is maintained for longer periods of time when compared to other pumping technologies."

Exel North America has made great strides in the past couple of years with its SAMES EasyDrive Fast Color Change Process. This automatic powder application system is designed to provide 100 percent coverage of parts with minimal manual adjustments, and uses fixed automatic powder guns with low powder flow and high electrostatic effect instead of using guns mounted on reciprocators. Features and benefits of the system include superior transfer efficiency, fast color changes with reduced waste, and a smaller footprint than competitive systems.

In addition, it is claimed to offer lower operational costs, for faster ROI, and to recycle more powder than competitive booths. The system provides part detection which will automatically move the fixed position guns in and out based on the size of the parts going into the booth for the best coating operation. The sensors will also trigger the guns at the correct times to allow for high first pass transfer efficiency.

The company states the benefits of SAMES include faster color changes with reduced waste, superior transfer efficiency, and the ability to recycle more powder than competitive booths. It also points out the system's small footprint and low operational costs.

The system provides part detection which will automatically move the fixed position guns in and out, based on the size of parts going into the booth, for the best coating operation. The sensors will also trigger the guns at the correct times to allow for high first pass transfer efficiency.

The quick color change system from Nordson Corp. (Westlake, OH), the ColorMax 2 powder spray system, is optimized for efficient, repeatable powder application and fast, contamination-free color change. Numerous system features, the company says, help to minimize powder in process as well as aiding in system cleaning. These features combine to provide the ability to change colors quickly.

The ColorMax 2 offers optimized powder recovery and recycling, a streamlined canopy and booth design to minimize powder in process, and a pre-assembled utility deck that speeds installation time. The AeroWash base cleaning system and AeroDeck air distribution system ensure minimal powder build up.

The unit's iControl integrated control system provides closed-loop dig-



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Gema's OptiSpray AP01 application pump uses Smart InLine Technology packaged into an OptiCenter color management system.



ital control of atomizing and flow rate, and the Encore automatic guns are cleaned automatically. The Encore powder feed center provides fully automatic powder delivery, recovery and color change for maximum powder usage. Additionally, the system meets applicable NFPA safety requirements.

Nordson also offers the compact Lean Cell fast color change powder coating booth, which minimizes floor space and conveyor line gaps. This system's open-face canopy allows for maximum operator access to parts being coated, plus flexibility of movement based on part size and shape for highest-possible transfer efficiency.

The company says it offer a color change in 20 seconds or less, and features an easy-to-use operator interface. It also asserts that the booth offers a higher CFM capacity than conventional booths, and a 28-color capacity per operator.

It features high-density powder, low-velocity (HDEV) air dense phase powder transport, a Prodigy manual spray gun, and Prodigy Color-on-Demand. Instant Color Selector. This, according to Nordson, sets a new standard in lean powder coating, with high coating performance and efficiency, as well as the fast color change.

Prediction of results is always a critical factor in color changing. Alok Verma, market manager for paint and coating with Datacolor (Lawrenceville, NJ), notes how certain trends are driving the demand for new technology.

"In the US and Canada, many of our industrial customers have factories and laboratories that are spread out globally," he says. "They want color prediction capabilities that enable them to go straight to tint or pro-

vide very high matching accuracy in first-pass itself. Speed of customer service is important, especially for applications such as powder coating where a lab trial can take several hours going from weigh to premix, extrude, chip, mill and coat."

These customers, he observes, increasingly want to share their core pigment library globally, so that the satellite locations can leverage the same raw materials and don't waste time repeat matching similar colors. This is also enabling digital sharing of color master standards.

"The trend toward greener products with low VOC colorants is in full swing as well as development of infra-red reflective pigments for cool coating applications for building products," he adds. "These trends are increasingly driving re-formulation of paint and coating product lines."

Datacolor recently introduced a major upgrade of its color formulation software, Match Pigment 3.0. It also launched Check 3, a new portable spectrophotometer for accurate color measurement.

Match Pigment v. 3.0 aims to improve the productivity and efficiency of laboratories and plants. SmartMatch technology, Verma says, can now produce up to 80 percent of the color recipes right the first time. ■



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Few parts of a vehicle need as much care in the pretreatment process as the underbody.

The fine art of

pretreatment

Pretreatment and washing are, clearly, critical steps in the coating or painting process. Many people would argue they constitute the most important steps of all.

But the devil is always in the details, and sometimes the fine points of this stage can be overlooked, only to show up when it's too late.

"There is increased global interest in education and training – in helping technicians, operators, and managers to understand the chemistry and physics of critical cleaning," notes Barbara Kanegsberg, a founding principal with consultancy BFK Solutions LLC (Pacific Palisades, CA). Yet she adds that, "with rare exceptions, critical cleaning is not taught in colleges and universities. Maybe it's time for that to happen."

She notes that environmental regulatory requirements as well as the cost of some solvents could make investment in well-contained cleaning systems more attractive. In addition, water is a precious commodity, a situation highlighted by recent water shortages in the western US.

"Management of water throughout the cleaning process can yield economic, product quality, and environmental benefits," she says. "Closed-loop or zero discharge aqueous clean-

ing systems are becoming increasingly popular; and it will be interesting to see how aqueous based processes evolve over the next few years."

Proper cleaning of substrates means removing foreign matter of all types, including welding splatter, grease, scale, oils, and other thing used or found in manufacturing environments. The next step entails uniform conditioning of the

substrate so it will bond with whatever coating is being applied. Attaining this uniformity can be the trickiest task, especially with metal components having complex geometries, or parts with areas of uneven surface.

A relatively brief cleansing operation might be all you need, or a multi-stage sophisticated pretreatment might be required to prepare for



depositing a conversion coating on the surface of the metal. And deciding exactly how much is enough, and what the best product will be for the job, is where the science becomes art.

One issue for Canadians is federal restrictions on imported chemical products, especially when environmental concerns are in the picture.

One issue for Canadians is federal restrictions on imported chemical products, especially when environmental concerns are in the picture.

David Schimpff, director, research and technology, says 'compliance-driven innovation' could be described as his company's mantra.

"We try to innovate constantly in the US, and a lot of that involves constantly adapting existing technologies," he says. "It also requires new chemistries.

"Organisations such as ours find it a challenge to innovate in Canada because of restrictions on amounts of material that can be brought in. For example, it means you can't implement the newest surfactants."

This country, as other observers have noted, sometimes offers an example of the law of unintended consequences, where regulatory

caution is preventing the wider spread of technologies that reduce waste-water treatment. In recent years, DuBois has heavily promoted its zirconium-technology DuraTec product range for paint pretreatment and surface finishing systems. This is achieving increasing market penetration, but Dunham thinks there's still a strong potential for growth.

"Once people change, they have no desire to return to phosphates – but people can be reluctant to change," he says. "The biggest companies in several fields have adopted it, but between 50 to 70 percent still use iron phosphate.

"DuraTec is very efficient and operates at lower temperatures than phosphate products. It's also very easy to operate."

Another recent DuBois introduction selling well is a family of bactericide free metalworking fluids, called Pearl-Z.

A new, acid-based paint stripper from DuBois is now close to the market evaluation stage. The lab work is done, and small batches of product are being prepared for trials. "The acid is mild enough that we get very low corro-

sion rates on steel and aluminum," Dunham says. "And it's very efficient and fast-acting on CARCs (chemical agent resistant coatings).

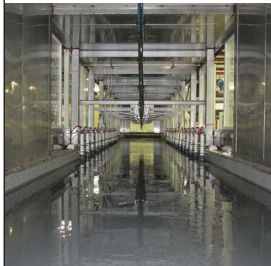
"A lot of aluminum-safe strippers are no longer safe if water gets into them, because you then start to get corrosion. This product, you can be diluted with water, without compromising metal safety".

The difficulty with introducing new technology is not confined just to Canada. Given how lean so many manufacturing operations have become in recent years, many companies are cautious about implementing new methods or new products. The learning curve and the re-training needed require a reallocation of the available human resources.

"There are two things, in general, that do result in people trying new, non-phosphate products," says Suresh Patel, business manager with Chemetall North America (New Providence, NJ). "One is a strong push from senior management, and the other would be new environmental regulations coming in.

"For example, northern Indiana has a regulation that prohibits phosphate-based products

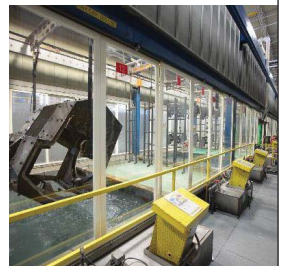
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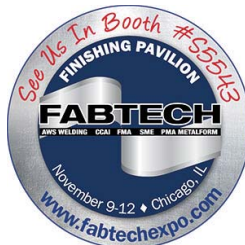
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used for pretreatment. That made everyone wake up, and call their suppliers. Also, many manufacturers like to maintain a green image within their local communities, so that's an incentive for top management to push for a shift to newer products."

However, the process of adopting different chemistries for pretreatment is still a gradual one. One resulting irony is that while the automotive industry in Europe is switching to newer pretreatment technologies, major automakers in North America have not followed the lead set by their European operations.

Chemetall's primary entry among new-generation products is Oxsilan, a multi-metal pretreatment process based on silanes. Through hydrolysis and condensation, these silanes form aqueous solutions – polysiloxanes. During the coating process, the reactive silanol groups can be chemically bonded to the metal as well as to the paint coating.

In combination with many paint systems, this is already sufficient to achieve the same degree of corrosion protection as with the ten times thicker zinc-phosphating layers. This reduces

materials consumption and pre-treatment times and increasing productivity, and improvements of 30 and 65 percent have been realized in practical applications.

"Growth in the switch to non-phosphorus pretreatment has been slower than we hoped," Patel says, "but progressively more people are embracing it."

Re-shoring also helps. While there are few firm statistics available on this, he says he hears across the board that the process is under way. Most observers do not feel North America will regain all that it lost in recent years, but any progress in this is welcome.

PPG Industrial Coatings has added several pretreatment and primer products this year, including ULTRAX metal conditioner 257, a near-neutral descaler solution that removes weld scale, light oxide and other impurities from steel surfaces and preconditions galvanized steel, white metal, aluminum and other non-ferrous metals prior to pretreatment with zinc-phosphate and other thin-film pretreatments.

Randy Brent, PPG director, pretreatment and

engineered products, describes this as a significant technical breakthrough because it enables descaling and surface activation of welds while pre-conditioning metal surfaces of parts comprised of mixed-metal substrates through a single descaling system.

"Multi-metal components are increasingly in demand among automakers because their lighter weight promotes greater fuel efficiency and improved corrosion resistance," he says. "With conventional metal-conditioning technologies, there is no simple way for manufacturers to clean and precondition welded parts made with steel alloys, galvanized steel and non-ferrous metals prior to pretreatment. ULTRAX metal conditioner 257 eliminates that problem by facilitating uniform application of zinc phosphate, which creates a corrosion-resistant barrier on mixed-metal frames, engine cradles, control arms, linkages and other underbody parts exposed to moisture, road salt, gravel and other hazards."

He adds that there are a number of operational and environmental benefits associated with this product's near-neutral pH composi-

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The traditional processes in pretreatment largely depend on phosphate-based products.

tion. In addition to offering a single-step descaling process, it emits no fumes, slows iron-build in the descale tank for longer bath life, and produces less sludge than standard acid-pickle descaling systems.

“The result is less waste, lower disposal costs and a safer operating environment,” he explains. “Other benefits include a dense, uniform phosphate coating on metal parts as well as improved phosphate coverage on and around welded seams and other zones affected by heat during welding and manufacturing, even after significant bath aging.”

PPG has also introduced a new fast-drying, two-component, wet-on-wet epoxy primer designed to help heavy-duty OEMs increase production throughput without sacrificing corrosion resistance. Scott Laney, product manager for liquid coatings, says PPG developed Spectracron SEP primer to meet OEM demands for primers with faster flash times.

“Before the introduction of this product, typical application times for primer and coating on a pretreated metal substrate were 30 minutes, with state-of-the-industry wet-on-wet flash times

of five to eight minutes,” he explains. “By reducing flash times to two minutes, Spectracron SEP primer is enabling OEMs to increase production rates without sacrificing quality while achieving cost savings in other areas of their operation.”

The primer can be used on production lines with five-, 10- and 30-minute flash times, enabling OEMs to simplify stocking and reduce inventory. The product also provides higher-gloss finishes with no solvent-pop or soak-in issues, as well as improved corrosion resistance, cycle times, masking performance and handling.

Operational benefits include low VOC emissions, easy application, reduced fluid flows and flush solvents, and lower paint costs. It is engineered for use in all areas of the heavy-duty equipment market and is well-suited for transportation and general finishing as well as propane, water and storage tanks. It is available in green and buff, and it may be formulated in other colors for specif-



ic applications or customers.

Sherwin-Williams has a significant range of primers for parts going into demanding environments. Its 2.8 VOC chromated epoxy polyamide primer (CM0724933) was recently certified by the US Naval Air Warfare Center (NAWC) as a qualified product in its list of high-solids epoxies, Type I, Class 2.

This durable CM0724933 primer, along with its adduct, CM0120933, reportedly provides excellent chemical, solvent and corrosion resistance. It is used as a primer under the company's own approved MIL-PRF-85285 polyurethane topcoats. ■

November/December 2015

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Conveyors Push the **LOAD LIMITS**

Conveyors are the workhorses in any finishing operation. While nobody is going to re-invent the existing conveyor technology any time soon, there's a constant quest for more reliability, as well as for greater payloads.

Jervis B. Webb Co. (Harbor Springs, MI) has a new system that will be introduced at the 2015 Fabtech show in Chicago this November. The Unibilt Inverted Three-Rail (ITR) conveyor has an inverted monorail conveyor features three rails, which significantly improves stability when navigating horizontal turns and vertical curves, as well as load capacity and cleanliness.

"Nearly 100 years ago, Webb revolutionized the conveyor industry with its rivetless chain conveyor that was used by Henry Ford in his early assembly lines," says Rob Schmit, company president. "We continue to lead the industry in conveyor innovation with our new Unibilt Inverted Three Rail, the most stable conveyor on the market today."

On vertical curves, ITR moves similar to an escalator tread, ensuring that the load remains level. The ITR's three-point, wide stance provides a stable platform to support large, tall loads enabling it to easily negotiate horizontal turns and vertical curves.

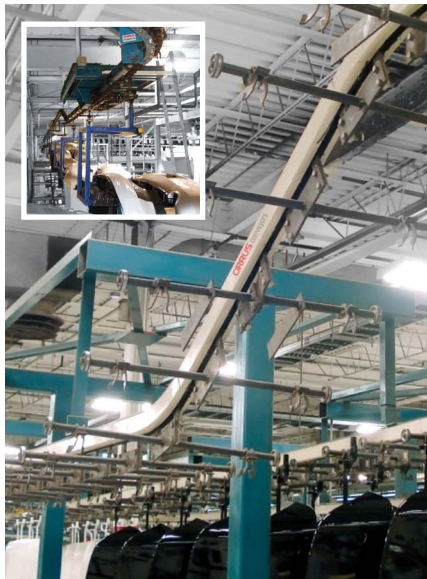
The new conveyor can transport loads up to 1,000 lb, which is nine times greater than other enclosed track monorail solutions. The ITR is being promoted for any operation that requires the stable movement of materials in an inverted configuration.

Michael Lane, Canadian zone manager for the company, adds, "We are constantly reviewing our manufacturing processes and studying ways to improve both process efficiencies and product quality. It is an ongoing effort to ensure we produce the most cost effective and highest quality product on the market."

Enclosed Track Conveyors Ltd. has introduced a replacement chain specially designed for Richards-Wilcox conveyors. Its load and guide wheels are machined and hardened with enlarged raceways, and more balls have been added to provide extra durability and capacity.

The company says there are 15 balls versus the standard 11, while the guide wheels have 10 as opposed to the standard eight. Improving the raceway in this fashion facilitates lubrication for longer conveyor life.

The company's enclosed conveyors are



An enclosed track conveyor from Cirrus. Inset: Cirrus I-beam conveyor system.

available with either a 1.5-in. or a 2-in. pitch chain. They also feature large raceways with double hardening to give longer wear properties and lower rolling friction.

Trolleys offer more than twice the conventional access area, for ease of lubrication. This further extends bearing life.

Additionally, any bearing that does fail can be replaced simply by unbolting it. There is no necessity to replace the whole trolley.

Pacline Overhead Conveyors (Mississauga, ON) offers its Enclosed Track Overhead Conveyor as a highly compact, medium capacity chain conveyor that allows for maximum conveying flexibility in small spaces.

It features low profile drives and track sections, small radius rolled and hardened curves, and also small radius sprocket turns and radius vertical curves that can go up to 90 deg. If needed.

This product range is designed to handle loads up to 50 lb. (23 kg) from single pendants, which are standardized on 6-in. centers. Coupling two pendants with a load bar allows up to 100-lb. loads. Distributed loads to 30,000 lbs can be conveyed on a 600 ft. system with only one drive.

Modular track components ensure quick, trouble-free, onsite installations, as well as modifications with reduced installation labor costs and minimized downtime. The bolted

track design allows for easy installation without welding.

All parts are zinc plated and heat treated to ensure full protection from wear and resistance to corrosive environments. Chain attachment points every 6 in. maximize the range of hanging products that can be handled.

In a different area of application, The Grieve Corp. (Round Lake, IL) has a new offering in belt conveyor ovens. Its model 823 is an electrically-heated, 1000-deg F belt conveyor oven, for drying water-based glue onto stainless steel mesh. However, the technology can be adapted for other product areas.

Features of the system include: a 30-in. wide, 1 x 1-in., 316L stainless steel flat wire conveyor belt with 1/4 HP motor drive, and a digital controller; variable from 0.5 to 10 ft. per minute. It also has a hot load, unload, and belt return.

Workspace dimensions are 36 in. x 15 ft x 15 in. The system uses a 7800 cfm, 5-hp recirculating blower providing vertical downward airflow, and features an aluminized steel exterior and a 16-ga. type 316L stainless steel interior as well as swivel casters with swivel locks and wheel brakes.

Cirrus Conveyors Inc. (Milton, ON) also offers a broad range of systems. Its Series 100 enclosed track conveyors can carry up to 50 lb (23 kg) on a single load bearing. Load pendants, located on 6-in. centres, are integral with the vertical load chain links. A single caterpillar drive will handle up to 600 lb (272 kg) of chain pull.

The heavier-duty Series 800's chain assembly consists of vertical and horizontal bearings providing 8-in. multiple hanging centres with a maximum single point load of 125 pounds (57 kg). Heavier loads can be carried by suspending between two load bearings with a load bar attachment. Maximum chain pull for a single drive is 750 lb (341 kg).

Cirrus' I-beam monorail conveyors are designed around a 3-in. I-beam track (Series X348) or a 4-in. I-beam (Series X678). Series X348 can move combined loads up to 70,000 lb (31,000 kg) with a single-drive system, while Series X678 is rated at just over twice that payload, at 150,000 lb (68,200 kg).

In both cases, multiple drives increase capacity. ■

Washout in Woodbridge



The OPCA Ontario Painting Contractors Association tournament at The Country Club June 25th was cancelled after a few rounds due to an electrical storm. The dinner got off to an early start and then the prizes including golf vacations for 4 were randomly awarded by draw.



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Understanding ALUMINUM HARDCOAT

BY FRED MUELLER



Hardcoated metal components.

When I think about metal finishing aluminum, the first thing that comes to mind is anodizing. The metal finishing industry has been anodizing aluminum since the middle of the 1800s. Being an anodic process where the part is the anode, anodizing is fundamentally different from electroplating. The process progression in anodizing pushes the coating out from the base of the part, so the growth of the newest deposit is from the base of the metal interface of the part, which is the opposite of electroplating where the newest deposit is at the top of the metal surface of the part.

Talk about being deceptively easy – anodizing is an electrochemical reaction that through some very complex chemistry changes the soft surface of the aluminum into a hard transparent oxide coating on the surface of the aluminum parts or components. And, all of this works by controlling a few variables. But some of the variables are more important than the others.

The First Variable - Anodizing Electrolytes

Many electrolytes have been tested over the last hundred years, but few have remained commercially important. Chromic, sulfuric, oxalic, phosphoric and boric are the acid electrolytes that have climbed the ladder to reach a high level of commercial success.

It's important to understand the evolution of these electrolytes over the last hundred years.

Chromic acid was commercially available in the early 1920s and is great at protecting aluminum assemblies, because any electrolyte left in the seams/junctions is not corrosive to the aluminum. The same is not true of the other commercial electrolytes. But the deposit is softer and more easily damaged, so chromic acid anodizing is not our first choice for hardcoat.

Next up is a strong acid electrolyte – sulfuric acid, which is by far the most common electrolyte for anodizing aluminum. It became commercially available in the late 1920s.

It can produce two different anodized coatings: a thin, very clear coating used as a decorative dye-able coating at ambient temperatures and a very much thicker, darker hardcoat at temperatures near freezing. So, it's no coincidence that commercial hardcoat is popping up in the late 1920s because the first commercial refrigeration units are also making their industrial appearance. This will be our first choice for our hardcoat electrolyte up until the 1990s.

Today's sulfuric acid electrolyte for hardcoat uses additives to make the solution less likely to burn the parts. The additives allow for faster, harder hardcoat at higher temperatures than ever before.

The oxalic acid electrolyte was introduced in the 1950s. Today the main interest in oxalic acid is as an additive to a sulfuric acid hardcoat solution. Sulfuric/oxalic acid electrolytes generate a harder coating quicker than is possible using an unmodified sulfuric acid solution.

Both the phosphoric acid and boric acid solutions have been developed into specialty anodizing electrolytes to yield coatings tailored to the aerospace industry by the Boeing Company. There are no commercial hardcoat possibilities in these electrolytes.

After looking over our choices, we are picking sulfuric acid for our electrolyte.

The Second Variable – Alloy

Most common alloys of aluminum can create a hardcoat with varying degrees of success. But,

if we are looking at the quality of just the hardcoat it is true that alloys seldom improve the key characteristics (adhesion, hardness, thickness) of the hardcoat.

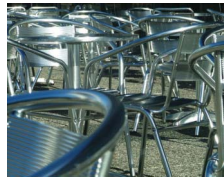
Alloys with high levels (>3%) of copper (2xxx) or silicon (>7.5%, 4xxx) can and do present real problems when we try to hardcoat parts. In general, alloy metals seldom enhance

the characteristics of the hard coat (thickness, hardness, adhesion) when compared to the hardcoat form by anodizing pure aluminum.

The very bottom film/layer that forms next to the aluminum during anodizing is called the barrier layer. It is the key to forming a hardcoat (dense aluminum oxide) on aluminum alloys.

The barrier layer needed to form a hardcoat

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“Sulfuric acid electrolytes have been studied at varying concentration and operation temperatures. Surprisingly, basically equivalent Taber wear resistances are obtained over a wide range of temperatures and acid concentrations.”

should be free of pores and not be a good conductor. High copper aluminum alloys (2024) can prove difficult to hardcoat as the barrier layer is more conductive when compared to other alloys due to the presence of copper in the film. The more conductive aluminum alloys are more liable to burning during conventional (non-additive) hardcoating.

Certain alloys, such as 6061, processed under identical conditions show a notably higher Taber wear resistance and better salt spray testing results. Researchers have found that after anodizing, the 6061 alloy has far fewer surface cracks than other alloys. Hint: when 6061 alloy is the majority of the work you are processing in any given month, use it for your Mil A -8625 test panels.

Picking our second variable is much tougher but we are hoping our customers pick the aluminum alloy 6061.

Temperature and Sulfuric Acid Concentration: the Third Variables

When a process has been around as long as sulfuric acid anodizing, many scientists have studied the effects of various operating conditions and improved the industry by sharing the information. Sulfuric acid electrolytes have been studied at varying concentration and operation temperatures. Surprisingly, basically equivalent Taber wear resistances are obtained over a wide range of temperatures and acid concentrations.

Moreover, it was discovered that current density played no significant role in the Taber wear resistance when operated around 5 deg. C. It was also confirmed that the Taber wear resistance increases considerably with coating thickness.

Temperature and concentration when tested within the ranges commercial used were not found to be important variables, so we will find something that works for us and stick with it.

But when the effects of increased temperature or increased acid concentration on the coating characteristics are tested outside of commercial ranges; 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 films.

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

This balance of deposit/coating rate vs. dissolution rate is affected by the variables: concentration of the acid, the temperature, and the ability of the system to remove the heat generat-

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A standard type of hardcoat anodizing line.

ed 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 that base temperature can be more than 250 deg. F.

The solution temperature in a conventional sulfuric acid anodizing bath should be near freezing 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.

Four – Voltage Variables

The voltage at which conventional anodizing (clear coat) transitions to hardcoat starts around 20 volts and becomes fully hardcoat around 30 volts. When seen through an electron microscope it can be shown that at voltages over 35V the coating begins forming brown hemispherical spots that spread out evenly over the surface of the part. This oxide layer forms when the voltage is >, and 35 accounts for the color seen in hardcoat. The coating formed at the higher voltages is about 125 percent harder than the initial coating. Like we have seen before, the initial coating (at the surface of the part) is solvated by the sulfuric acid electrolyte during the anodizing process leaving us with our final hardcoat surface.

Our Modern Variables

– Today's Process Improvements

A multipurpose sulfuric acid based anodizing electrolyte that uses a sulfuric acid solution of conventional strength and an additive to reduce the rate of anodic film dissolution by the acid. The same solution can be used for both decorative and hard coat with the only voltage being the

difference being a clear coat and producing a hardcoat.

New rectifier processes superimpose an AC current over the straight line DC. This allows for anodizing at higher current densities, and for hard coat anodizing to thicknesses as high as 3.5 to 7 mils depending on the aluminum alloy, even those with high copper content. The AC voltage is adjusted for each alloy.

Today we have high temperature (50 deg. F) processes which can hardcoat even the most difficult alloys. There are many proprietary processes available; too numerous to cover in this article. So talk to a supplier of anodizing processes and better control your variables. ■

Fred Mueller is corporate quality manager with General Magnaplate Corp. (Linden, NJ).

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Revitalizing the Rectifier

The humble rectifier hasn't changed a lot in recent decades. However, the increasing need for line monitoring and analysis of data when things don't go right, is changing how the equipment is used in the plant.

"People want more information and more control today," notes Kevin Hewitt, president at JBC Surface Finishing Systems Ltd. (Chatham, ON). "Everybody wants to know what's happening on the line. So, for us to offer a platform to communicate is important."

His company, which he and business partners purchased not long ago, owns the North American Rectifier (NAR) brand, which is the last Canadian-made line of rectifiers. NAR's history goes back decades to when it was called Thyristor Devices Ltd., and Hewitt says he still comes across working units with the old company's logo on them.

"They're very rugged, and they just last and last," he says. "We focus solely on air-cooled SCR rectifiers."

For today's needs, the company offers three levels of software: PlatePro, for one rectifier, PlatePro Commander for a complete line with multiple rectifiers, and PlatePro Commander Plus for data acquisition and storage. The company is standardizing on a five-in. control panel for single units of its rectifiers. For rectifiers operating in series, it offers a high-speed, 10-in controller that can manage up to 10 units.

The primary markets for the NAR line are anodizing and chrome plating, decoration and hard chrome plating. The line runs the gamut of amperages and voltages, from 1000 amp to 30,000 amp, and five to 24 volts and up.

"We pretty much cover the range," Hewitt says. "If people want longevity and worry-free operation, they come to us. We're about low cost of ownership."

While the Canadian marketplace is holding steady at the present time, JBC is looking at the US for its expansion plans. Right now, the company is looking at possible distributors. The low Canadian dollar is a help with export sales, but the sheer size of the market to the south means there's always a niche for an aggressive exporter.

"We do have to buy some non-Canadian

components, and our biggest cost is copper," Hewitt says. "There's a lot of copper in a rectifier. Labor is the second-highest cost, because every unit is custom-made. We can stock certain components, but everything is still a custom order."

Dynatronix Inc. (Amery, WI) serves the markets for surface cleaning applications,

etch-plate processes, increasing leveling and deposit uniformity, as well as all electrochemical etching & electropolishing applications. It currently offers rectifiers in the 100kW and 200kW output ranges as part of its Diamond Series product line.

One of its niches is reverse current systems. It offers three levels of controls for these sec-



A Dynapower SCR rectifier unit.

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tors: the Diamond series of digital encoder controls or QVGA touch screen controls; the Microstar series of microprocessor-based programmable controls; and the PRO series of PC-based controls and multiple outputs.

The company prides itself on being able to offer custom power solutions, and more than 30 percent of its workforce are in its engineering departments. Collectively, they deliver around 50 custom designs every year.

And one recent coatings-related application involved developing a nanotechnology-based chemistry to replace hexavalent chromium. This was done in conjunction with the US Defense Dept.

Process Electronics Corp. (Mount Holly, NC) offers its SASSC liquid-cooled DC conversion systems for electroplating, anodizing and galvanizing. Because all circuitry and components used in these are environmentally protected in sealed cabinets, the company says they are ideal for corrosive environments.

These power supplies feature proprietary two-stage cooling systems designed to prolong the life of all sub-assemblies and components. In the first stage, a coolant continuously bathes components in a closed-loop system. The second stage maintains the temperature of the coolant automatically.

A liquid-to-water heat exchanger removes heat from the coolant solution using an outside fresh water source. This technology prevents the fresh water from coming in contact with electrical components and minimizes consumption and maintenance requirements.

The range has units from 500 through 12,000 amperes, and up to 60 volts DC output. There is a paralleling capability for high power arrangements

Surge-rated SCRs tolerate momentary electrical faults, and there is automatic \pm one percent control of voltage and current. There are built-in or remote operator controls for installation flexibility, and a closed-loop cooling system isolates coolant and simplifies maintenance.

American Plating Power (Fort Myers, FL) offers air, water and oil-cooled rectifiers. The MTA air-cooled units are electronically controlled via analog signals, for constant voltage

“Fifteen different ramp time ranges can be selected through a convenient DIP switch. The ramp time is variable from one to 100 percent of the selected range.”

oil, so optimum cooling and protection from the environment is guaranteed. There is also an MTOW range that combines water and oil cooling, for demanding niche applications.

Dynapower Corp. (South Burlington, VT) offers both water and air-cooled rectifiers. The controls systems on these allow isolated connections of a rectifier to a computer or PLC. The computer or PLC can send voltage and/or current control signals to the rectifier, and in return receive signals from the rectifier proportional to the output voltage and/or current.

This system is available in analog, modbus, Profibus, ethernet and DeviceNet formats. When AC power is applied to the rectifier, the DC output will ramp up from zero to the preset output over a specific time.

Fifteen different ramp time ranges can be selected through a convenient DIP switch. The ramp time is variable from one to 100 percent of the selected range. When the predetermined output level is reached, the power supply will automatically maintain a constant output for the duration of the cycle.

And one company, American Plating Power (Fort Myers, FL) has just expanded its presence in the Canadian market through a sales arrangement with Service Filtration Canada (Mississauga, ON). APP president Waasy Boddison says Service Filtration was chosen for its customer-centered reputation, built up over three decades in business, as well as its expertise in all aspects of metal finishing equipment and production.

“We are proud to partner with Service Filtration Canada,” he said in announcing the arrangement. “They share APP’s vision of delivering best-in-class solutions to industrial customers and our commitment to delivering superior customer service.” The Canadian firm will also provide field support services.

American Plating, in conjunction with Munk rectifiers, based in Germany, manufactures DC power supplies for a wide variety of industries including electroplating, anodizing, ecoat and water treatment. Styles of rectifiers include SCR, switch mode, pulse, reverse pulse, multi-circuit, DC/AC, and variable transformer rectifiers up to 100,000 amps. ■



A controls interface for a Dynapower water-cooled rectifier.

and current control. excellent operational reliability. Optional features include polarity reversal, a field bus system, and a ripple filter for working with chrome, brightening, and alloys.

The MTW water-cooled range is intended for harsh environments. As well as the primary features available in the MTA range, it offers electronic adjustment, with smoothing inductance available as an option.

MTO oil-cooled rectifiers have all critical power components completely submerged in



Canadian Association for Surface Finishing

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 - Sustainability trends in surface finishing
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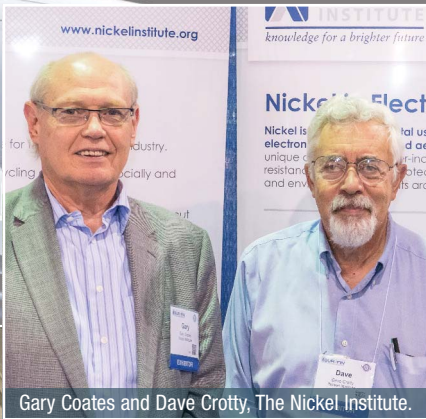
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Brad and Jeff Hatcher, The Dangler Guys.



Kevin Hewett and Peter Forth JBC.

NEW PRODUCTS AND TECHNOLOGIES

Electrostatic applicators

Ransflex manual applicator.



Ransburg (Toledo, OH) has introduced its RansFlex manual applicator series as advanced electrostatic finishing applicators. They are engineered to incorporate DeVilbiss proprietary atomization technology.

Durable, small and light in weight, RansFlex applicators feature protected strategic components with this cascade atomization technology, for high end performance and finish. These advancements are claimed to exceed the performance and transfer efficiency of higher voltage electrostatic guns.

“We started fresh, from the body outside to the atomization technology inside,” stated Judy Lietzke, product manager. “These new electrostatic applicators incorporate many features promoting operator comfort for hours of uninterrupted operation.”

There are two models, both of them FM / ATEX / CSA global standards compliant. These are called the RansFlex RX and the RansFlex RFX.

They offer high kV produced in the typical spraying range as well as improved transfer efficiency and less overspray. Designed for durability, comfort and easy maintenance, they feature ergonomic fit, feel, balance and controls.

A patented turbine, provides vibration-free operation, a smooth, non-hydroscopic barrel, and impact-resistant engineered gun body materials

There is also a five-year warranty, which the company claims is longer than that for any other electrostatic gun in the industry.

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KITF3 Shown

Paint film tester

The TQC Cylindrical Bend Test from Paul N. Gardner Co. Inc. is a robust yet elegant testing instrument to indicate the elasticity, elongation and adhesion of a paint film at bending stress. It is designed to perform tests according to the latest ISO standards, notably ISO 1519: 'Assessing the resistance of a coating, paint, varnish or related products to cracking and/or detachment from a surface when, subjected to bending around a cylindrical mandrel under standard conditions.'

The Cylindrical Bend Test is made of anodized aluminum and stainless steel, and features an ergonomic clamping device for test panels, a large knob on the bending arm for smooth and easy bending, and a desk-top mandrel holder which can also be mounted to the wall for convenience. The instrument will bend test panels up to 150 x 100 mm.



The model SP1820 includes the Cylindrical Bend Test 100 mm, a desk-top mandrel holder with a set of 14 mandrels with a diameter of 2, 3, 4, 5, 6, 8, 10, 12, 13, 16, 19, 20, 25 and 32 mm.

The model SP1822 includes the Cylindrical Bend Test 100 mm, a desk-top mandrel holder with a set of seven mandrels with diameters ranging from 1/8 in. to one in.

SP1820 complies to ISO 1519. SP1822 complies to ASTM D522. Unit dimensions are 140x 170 x 340 mm, and weight is 4150 gm.

The maximum test panel thickness is 1 mm.

Air-operated pumps

Binks (Glendale Heights, IL) has introduced its new DX70 series of air operated 1:1 ratio diaphragm pumps. Built for direct feed to a single spray gun, these pumps include a built-in fluid regulator which ensures a constant and virtually pulse-free fluid delivery.

This design reduces the cost and complexity of additional fluid

regulators or surge chambers. The DX70 pump features a unique diaphragm no-crease shape for a long life.

"The Binks DX70 is the high performance solution for one-gun spray applications with faster color changes and quick refills for less production downtime," according to Skye Stapella, product manager. "And the DX70 is ready to go to work immediately with fully assembled outfits that include the Binks Trophy HVLP spray gun and 25 ft. each of air and fluid hose."

The air valve provides smooth, quiet and surge-free paint delivery up to 34 fl. oz/min (1000 cc/min). The acetal pump body with stainless steel balls and soft seats allows for universal paint compatibility for solvent- and water-based materials.

There are four configurations: wall, cart, tripod or pail options.

DX70 Series diaphragm pump.



Water-based sealants



Birchwood Clearlok Max.

Birchwood Technologies (Eden Prairie, MN) is offering two all-purpose Clearlok water-based sealants formulated to provide a protective topcoat on most metal surfaces. Clearlok is available in two forms: Clearlok Clear Urethane Sealant for super hard finishes, and Clearlok Max for faster drying and easier removal in alkaline soak cleaners.

Clearlok Clear Urethane Sealant is a heavy-duty, urethane polymer sealant that forms a hard, glossy protective coating. It works well on black oxide finishes on iron and steel, black finishes

NEW PRODUCTS AND TECHNOLOGIES

on aluminum, and on non-finished iron, steel and aluminum surfaces. This sealant can be used to enhance the gloss and overall appearance of the final finish. Clearlok polymer sealant is intended to add a quality look and feel to hand tools, automotive components, and machined components. The final protective coating thickness is 0.0001 to .00003 in.

It is rated for corrosion resistance of 24 hours of neutral salt spray or two hundred hours of humidity exposure.

Clearlok Max is a water emulsion blend of acrylic polymers and rust inhibitors that forms a clear protective coating. This finish serves as a topcoat for black oxide or other surface coatings.

It can also be applied directly to clean or shot-blasted metal surfaces such as bare steel, aluminum, nickel and zinc plating. This sealant is suited for use on hand tools, machine components, power transmission components, pumps, valves and oil-field equipment.

Once dry to the touch, the parts are ready for assembly or packaging. The final protective coating thickness is about .002 in. It is rated for corrosion resistance of 24 hours of neutral salt spray or two hundred hours of humidity exposure.

Both Clearlok and Clearlok Max sealants are supplied as liquid concentrates that can be diluted with water for application using immersion tank processes, spray application, or easy brush-on application. They are easily implemented on most plating and finishing lines.

Both products are non-toxic, fume-free and safe to use in any process line without ventilation. They are available in five and 55-gal. drums.

Static-dissipating powders

Milliken Chemical's Zelec electroconductive powders (ECPs) are for manufacturers wanting a high-performing static-dissipative additive for coatings and plastics. Zelec powders work in a variety of coating, packaging, fiber, and film products where the dissipation of static charge is important.

They can be used according to various needs since each powder is unique due to core structure and particle size. They allow applied coatings and plastics to be formulated in a wide range of colors, including white. The non-core grade ECP can also be formulated into transparent applications.

They work with either solvent-borne or water-borne formulations, and atmospheric moisture does not affect their performance. Conductivity remains consistent regardless of humidity. The product also resists acids, bases, oxidizers, and high temperatures.

Wet-state preservative

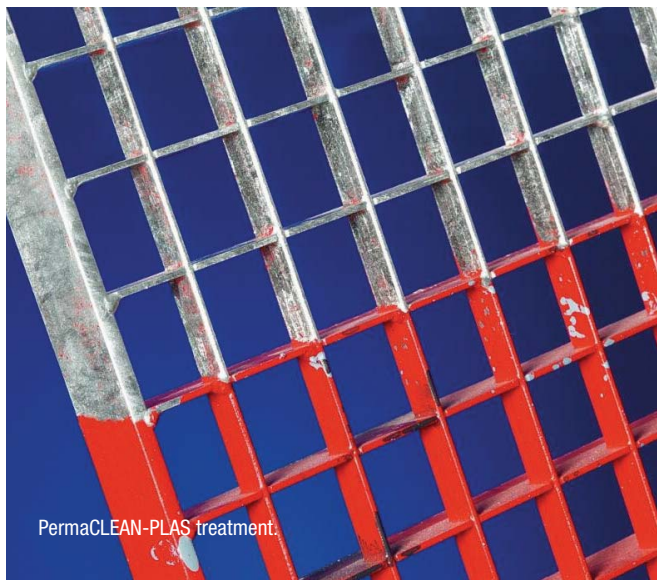
Troy Corp. has introduced advanced Mergal WP45, a broad-spectrum wet-state preservative for the control of contamination and spoilage-causing microorganisms in the wood manufacturing environment. It is a fast-acting preservative, enabling rapid control of contamination situations, and it also offers a long-term preservation component.

Formulated for optimum efficacy, Mergal WP45 offers cost-effective materials protection at very low use rates, enabling manufacturers to balance cost control with performance objectives. It is based on OIT (octyl-isothiazolinone) technology, providing highly

effective activity against bacteria, molds, and yeast.

"Mergal WP45 offers the highest potency biocide chemistry in materials protection," says Troy's Dr. Izzy Colon, vice-president, science & technology. "The incorporation of isothiazolinone delivers more microbial control per active pound of biocide than any other technology available. As a result, Mergal WP45 is highly cost-effective, and has a minimal environmental footprint because of its high activity at very low use levels."

Plasma-based paint remover



Paint removal from grates and jigs is a particular challenge in industrial automotive applications, given the volumes involved. Often, production lines must be completely halted for multi-cycle, high-water-pressure cleaning of grates, which is both time- and energy-intensive. The alternative – high-temperature carbonization cleaning – is generally done off-site, leading to production downtime, and can damage the grates' zinc coating.

Plasmatreat has worked in conjunction with Fraunhofer IFAM to develop a plasma-based solution to this problem, and is now commercializing PermaCLEANPLAS coating. This is a permanent paint release coating that facilitates the removal of overspray that occurs in high-volume paint coating industries, such as automotive).

The company says it reduces the time and energy needed for paint removal, needing 500 bar as opposed to 2500 bar water pressure. It performs thorough cleaning in a single cycle, and is appropriate for complex geometries.

It is solvent resistant, colorless and transparent, and is stable up to 300 deg. C. Cleaning can be performed inside the factory, which means no contamination and less production downtime. And the coating remains functional after over 1000 cleaning cycles.

PermaCLEANPLAS is applied via a low-pressure, cold-coating plasma deposition process to clean, rust-free surfaces. It can be used for both aqueous paint coatings and powder coatings (if cured), and on various substrates, including hot-dipped or galvanized steel, stainless steel, aluminum, plastics, and powder-coated components.

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PPG EXPANDS WUPPERTAL FACILITY
PPG Industries recently completed a US\$5-million expansion at its coatings manufacturing facility in



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Water-borne carbons



Orion Engineered Carbons has new carbon black pigments for water-borne, solvent-borne, powder and conductive coatings. These are Colour Black FW 255; Special Black 40; Colour Black FW 171 and XPB 545.

Colour black FW 255 pigment, the first launch of this product generation, is claimed to offer high jetness, coloristic performance, and compatibility with both water-borne and solvent-borne systems. Colour Black FW 255 enables formulators to maintain performance and coloristic properties while migrating to water-borne formulations. It is especially suited for automotive OEM and refinish systems.

Special Black 40 is for medium- to high-jet coatings, and is said to set a new standard for dispersibility and stability in industrial applications. It works in all coating formulations – solvent-based, water-based, high solids and powder coatings – providing formulators with broad flexibility.

Colour Black 171 is for water-borne and powder coatings, and is stated to offer excellent stability, a distinct bluish undertone and superior jetness in both water-borne and powder coatings. Its coloristic results and stability recommend it for water-borne OEM automotive formulations, refinish and high-performance industrial coatings systems.

Carbon Black XPB 545 is claimed to offer a superior combination of properties for anti-static and conductive coatings. It meets or exceeds performance requirements for conductivity, dispersibility and cleanliness, at lower concentrations than conventional conductive carbon blacks. It can also create a coating film with deep jetness and high gloss.

Water-reducible enamel

Sherwin-Williams has introduced its KEM AQUA 8710 Water Reducible Enamel for general metal applications. The new coating dries to touch within 30 minutes and dries to handle within 75 minutes, allowing manufacturers to increase throughput.

This enamel is claimed to meet high consistency and esthetic finishing standards with one-coat protection for demanding applications, and can be applied over the company's primers for improved finish performance. Finishers can also apply the product in a variety of spray methods, including conventional, airless, air

assisted airless spray, high volume low pressure (HVLP) or dipping.

A water reducible coating that decreases the need for solvents, it also offers low VOC levels below 2.8 lb per gallon, allowing manufacturers to meet strict environmental standards without sacrificing the finishing quality and durability required. It is available in a broad range of colors and glosses, offering manufacturers the flexibility to meet specific finishing needs.



“KEM AQUA 8710 will help our customers respond quickly to their customers’ needs and wants,” said David Calabra, Director Product Management Metal & Plastics, Sherwin-Williams. “This product was field-tested at six different customer sites, and each came back with results that met or exceeded their expectations. KEM AQUA 8710 can improve the efficiency of a finishing line, meet local environmental regulations, and provide a good-looking, long-lasting finished product.”

Dye-free copper process

Enthone's Cuprostar 1610 bright acid copper process is a dye-free and methanol-free process that produces brilliant and highly ductile copper layers with low internal stress. The uniform copper deposit may be used as an intermediate nickel-chromium layer on plastics (such as ABS and PC/ABS) or on a variety of metal substrates.

Cuprostar 1610 offers adjustable leveling performance, thereby virtually eliminating the potential for pits and pores and other defects such as orange peel, over leveling and flame patterns. The dye-free process easily and efficiently plates bulk components with complex shapes and high current density areas.

Delivering reportedly high yields, it provides consistent metal distribution and excellent throwing power. The acid copper process reduces maintenance demands by requiring fewer additives than dye-based acid copper processes, while also producing no sludge, leaving tank walls clean. The brightener additives are said to be very stable, ensuring reliable production performance at a lower consumption rate than dye-based processes.

Maja Brandes, global product manager – Enthone plating-on-plastics and decorative base metals, said, “A new generation of copper electrolytes enables Cuprostar 1610 to provide excellent

brightness, while eliminating the potential of overleveling which is often witnessed with existing dye and dye-free acid copper systems.”

The product is currently used for a wide range of automotive decorative trim applications, including wheels, grills, body trim and door handles, as well as plumbing fixtures and fittings, hand tools, door and window hardware, and lighting fixtures.

Corrosion Inhibitor Uses Nanotechnology



Cortec's EcoFog VpCI.

Recessed spaces are easily missed by common corrosion inhibitors leaving areas exposed to the dangerous effects of corrosion. Cortec Corp. has introduced EcoFog VpCI-309 Nano to reach these hidden areas. This patent pending product is a Vapor phase Corrosion Inhibiting (VpCI) powder designed to protect ferrous metals in hard-to-reach recessed areas, interior cavities, and voids.

Due to its submicron particles, it diffuses faster, travels longer distances, and has a much larger specific surface area compared to a product with larger sized particles. EcoFog VpCI-309 Nano offers VpCI protection with unique physiochemical advantages, making it an extremely efficient method to treat hard-to-reach spaces within an enclosed space.

The material uses Cortec's VpCI technology to provide a monomolecular inhibiting layer on products. The powder is easy to apply with little or no surface preparation needed and provides superior protection to ferrous metals including carbon steel, stainless steel, and aluminum.

This product does not contain silicates, phosphates, nitrites, or heavy metals and provides up to 24 months of continuous protection. EcoFog VpCI-309 Nano does not affect the physical properties of the product and can be removed by air gun or water rinse.

Black Oxide Works for Smaller Scale Production

Presto Black room temperature black oxide from Birchwood Technology (Eden Prairie, MN) is offered for small to medium production operations requiring robust corrosion resistance and galling protection on critical surfaces for machine components. The process produces a non-dimensional coating thickness of less than 0.5 micron thickness and is suited for components that require a black finish for visual appeal and rust protection.

Presto Black is a short 15-minute process that eliminates the hazards of the hot oxide process by operating at room temperature at 70 deg F. It provides high corrosion resistance and is tested for up to 800 hours humidity exposure when sealed with an appropri-



Presto Black black oxide.

ate rust preventive.

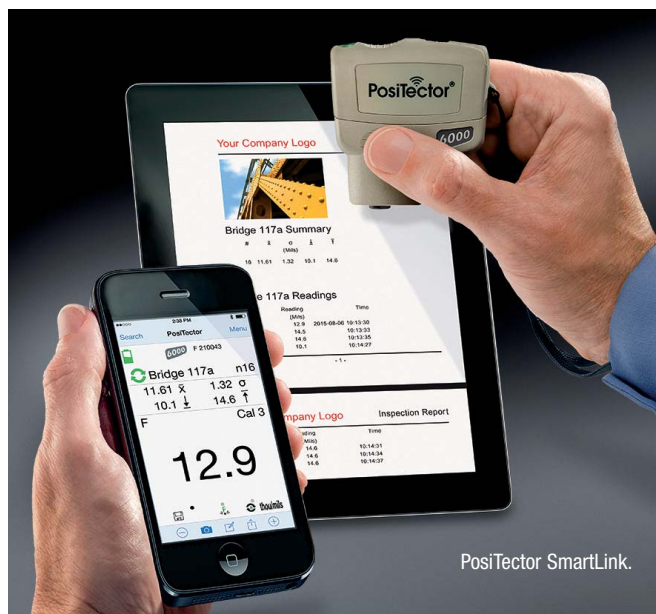
This process provides a friable crystal structure that serves as a sacrificial barrier on sliding surfaces to protect the underlying steel itself from galling and deformation. It can operate with zero discharge of rinse waters using the Birchwood Technologies Ion Exchange System. It cleans and purifies the process rinse waters so they can be re-used rather than sent to the drain.

Inspection Unit Links Through Android Phones

Following the introduction of its PosiTector SmartLink for iOS devices, DeFelsko is releasing the PosiTector app for Android. The PosiTector SmartLink and free mobile app turns a cellphone or tablet into a multi-functional inspection instrument.

With this system, it is possible to wirelessly connect PosiTector thickness, surface profile and environmental probes to take full advantage of the simplicity and utility of a smart device including keyboard, microphone, camera and email tools. It allows a user to create and share professional PDF reports and CSV data instantly via email, AirPrint, Dropbox and other applications.

The PosiTector app is available immediately on Google play and through Apple iTunes store.



PosiTector SmartLink.

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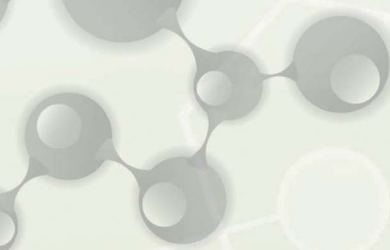
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