CFCM
CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

Automatic Plating

Demand for Throughput Boosts Automatic Plating

PLUS

Industrial Finishing

Plating and Anodizing

Paint and Coatings Manufacturing

www.cfcm.ca
MAY/JUNE 2017

CANLAK

HIGH QUALITY INDUSTRIAL WOOD COATINGS

DARE TO TAKE A CLOSER LOOK

CANLAK.COM | CANLAK

QC: 1 819 367 2201 | ON: 1 905 673 2936

CFCM
CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

Volume 11 Number 3
May/June 2017

EDITOR
Edward Mason
416-423-0150
edward.mason@cfcm.ca

PUBLISHER and SALES
Pete Wilkinson
705-296-3030
Fax: 705-296-3031
pete.wilkinson@cfcm.ca

VICE PRESIDENT, ACCOUNTING, CIRCULATION and SALES
Brian Jones
905-405-1500
Fax: 905-592-1880
brian.jones@cfcm.ca

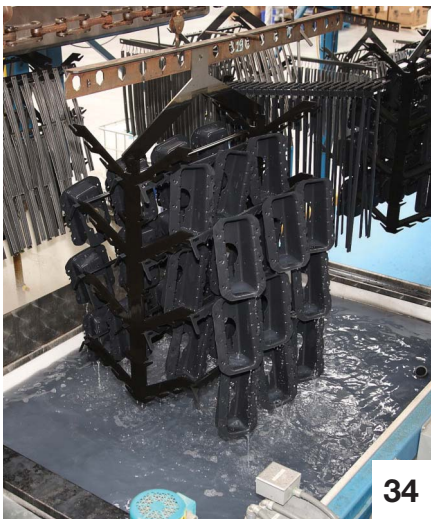
GRAPHIC DESIGN
Allan S. Bates
Green Apple Prepress
allan.s.bates@sympatico.ca

CFCM Canadian Finishing & Coatings Manufacturing is published bi-monthly by Wilkinson Media Canada Inc. Subscriptions are free to qualified Canadian finishers and coatings manufacturers and their suppliers. Subscriptions (six issues): Canada $60.00 per year plus taxes (GST #858877210 RT0001). United States U.S. $57.00. Foreign U.S. $85.00. Single copy $12.00. Buyers Guide $40.00 CDN plus taxes.

Postal Information:
Printed in Canada. Publications Mail Agreement PM # 41515012
Return undeliverable Canadian addresses to CFCM Magazine Return undeliverable Canadian addresses to CFCM Magazine, Suite 259 , 2186 Mountain Grove Ave.
Burlington, ON Canada , L7P 4X4,

Wilkinson Media Inc.
Suite 259
2186 Mountain Grove Ave.
Burlington, ON Canada
L7P 4X4

CONTENTS


34


38

Plating and Anodizing

Industrial Finishing

Paint and Coatings Manufacturing

On the Cover: Corrotec Incorporated Plating Hoist System installed at ADVICS Manufacturing Lebanon, Ohio. www.advics-ohio.com

Departments

Stormy Weather

To say the outlook on our economy this summer is mixed is to make an understatement. Inconsistent hints from Washington about various aspects of NAFTA have investors spooked, and this has driven down the loonie. At press-time, it was wobbling around 73 cents US.

The Canadian dollar itself is usually a good news-bad news story. If it's up, it's usually because the oil-patch is prospering, and the rest of us are doing so-so. If it's down, it offers a chance to grab orders from US companies wanting to benefit from the exchange rate.

When I first became a trade magazine editor, the world worked differently. That was pre-NAFTA, let alone pre-internet. The big thing to cover was usually some government measure seen as anti-business. Today voters are often less attached to moves that could reduce jobs, even if environmental regulations are still a thorny problem. (See Gary LeRoux's contribution, Real Challenges for Canadian Coatings, in this issue, for an update on that).

A further key difference then was that it was possible to identify all your potential competitors. It was consequently easier to calculate the major factors influencing business, 90 percent of these coming from within Canada or from the US.

Saying it's complicated out there today is like commenting that January in Canada can be a little cold. But addressing increasing complexity is one of the more demanding requirements imposed on managers today.

It often puzzles me that many companies don't take advantage of either industry associations or trade shows and conferences. It isn't that such groups or gatherings will offer all the answers you want, so much as they can hep define the questions. Associations have antennae in both government and in trade developments, and shows always have some surprising information for people who seek it out.

As we head towards reopening NAFTA, making sure you have as much information as you can collect is going to be more important than ever. If the opening months of 2017 are any indication, we're all going to need as much data as we can handle.

Edward Mason
edward.mason@cfcm.ca

YA GOTTA BE HERE!

A MUST BUY FOR SUPPLIERS TO CANADIAN INK, PAINT AND COATING MANUFACTURERS AND INDUSTRIAL FINISHERS

Reserve Your Ad Today Today!
Ad Insertion, June 22nd
Ad Copy June 28th

FREE LISTINGS FOR:

- Paint and Coatings for Industrial Finishing
- Equipment and Services for Industrial Finishing
- Metal Finishing Supplies for Anodizing, Plating and PVD
- Metal Finishing Equipment
- Paint and Coating Raw Materials, Supplies and Services
- Paint and Coating Manufacturing Equipment
- Custom Coaters and Job Shops
- Associations, Education and Government

CFCM
CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

Publisher & Sales
Pete Wilkinson
1-705-296-3030
pete.wilkinson@cfcm.ca

Editor
Edward Mason
1-416-423-0150
edward.mason@cfcm.ca

FREE listings at: cfcm.ca

Dow-DuPont Fusion Draws Closer

Dow Chemical and DuPont are closer to becoming DowDuPont, with the European Union agreeing to their joining. In order to make the $130-billion merger happen, the two firms have agreed to sell key assets that include research and development activities.

The EU had been worried that the merger of the two biggest chemical producers would impede on incentives for herbicide and pesticide innovations. Regulators had suspended the review twice seeking more information from both companies. However, the final decision required less divestment than some analysts had predicted. Dow has to sell two acid copolymer plants, in the US and Spain, plus a third-party contract through which it buys ionomers. DuPont must divest large portions of its pesticides business, including related research and development organizations. This unit produces herbicides and pesticides.

EU Competition Commissioner Margrethe Vestager.

European Competition Commissioner Margrethe Vestager said in a statement: "Our decision today ensures that the merger between Dow and DuPont does not reduce price competition for existing pesticides or innovation for safer and better products in the future."

While the deal still needs to be approved by Brazil, China, Australia, Canada and the US, the two companies released a joint statement citing the significance of the EU win.

"This regulatory milestone," it states, "is a significant step toward closing the merger transaction, with the intention to subsequently spin into three independent publicly traded companies."

Merger of Valspar and Sherwin-Williams Postponed

The planned joining of Valspar Corp. and Sherwin-Williams Co. has been postponed until June. The companies reportedly need more time to satisfy regulators' divestiture requirements.

Sherwin-Williams' purchase of Valspar — for $113 per share — was earlier expected to close by March 21, or possibly in April.

Sherwin-Williams reported earlier this year that it expected the US Federal Trade Commission to require some sort of divestiture from Valspar's portfolio before regulators would approve the acquisition, which was originally priced around $11.3-billion. Details of the divestiture have not been announced.

"We continue to move forward on the divestiture of a single business that we believe will allow us to gain approval from the FTC, and we are in discussions with a number of prospective buyers," said Sherwin-Williams CEO John Morikis. "We remain confident in our ability to complete the divestiture at a fair price, and we look forward to

unlocking the value of the combined business when the Valspar acquisition closes."

Gelest Plans Growth

Gelest, Inc. (Morrisville, PA), which makes customized, highly specialized organosilicon compounds, metal-organic compounds, and silicone materials, has partnered with New Mountain Capital, LLC, a New York investment firm that currently manages approximately $15-billion in assets. New Mountain identified Gelest through its focus on the life sciences and specialty materials sectors, and will provide significant financial and strategic resources to support future growth initiatives and better serve its customers.

"New Mountain is the ideal partner to help Gelest execute on its growth plans," said Barry Arkles, president of Gelest. "New Mountain is known for its focus on business building, and Gelest will have deep resources at its disposal to help us achieve our strategic growth objectives. We look forward to our partnership and the benefits it will yield for our customers and employees."

Sico Uses Eye-Catching Ads

Sico's bus shelter ads match passing colors.

Sico is trying a new promotional approach for its paints, using ads at Montreal bus-shelters. The ad spaces are fitted with sensors that capture passing colors, and immediately pull up a matching paint swatch from Sico's database.

Sico, which is part of PPG Architectural Coatings, teamed up with Sid Lee Studio to promote a line of paints sold exclusively at Quebec's Réno-Dépôt retail chain. The studio partnered with Astral Out of Home advertising for the installation.

A previous campaign, in 2015, used large ads with sensors that let them match the changing colors of the sky. One intent with this latest effort is to drive traffic to the Sico and Réno-Dépôt apps, which also have the ability to scan colors and find swatches.

Axalta Buying Valspar Wood Business

Axalta Coating Systems has entered into a definitive agreement with Valspar Corp. and Sherwin-Williams Co. to acquire the assets of Valspar's North American Industrial Wood Coatings business for $420-million in cash. Valspar is divesting the business in connection with the reviews by the Federal Trade Commission (FTC) and Canadian Competition Bureau (CCB) of the proposed acquisition of Valspar by Sherwin-Williams. The business had 2016 revenues of approximately $225-million, and is a major North American provider of coatings for OEM and aftermarket

industrial wood markets, including building products, cabinets, flooring and furniture. Known in the market today as Valspar Wood, the business has a number of widely known brands including Zenith, Lustre Lac and Graintone. These products are backed by a strong R&D and technology organization.

"This is an outstanding opportunity for Axalta to enter the large industrial wood coatings market with an industry-leading portfolio of products and customers," said Axalta chairman and CEO, Charlie Shaver. "The strong reputation enjoyed by these brands among a long-term customer base will provide an excellent platform for future growth in this important market. Our shared commitment to technology and excellence in application services, as well as a strong pipeline of new products, will enable us to meet the needs of both current and new customers. This acquisition continues to build on our strategy to strengthen and further diversify our Performance Coatings segment."

Axalta intends to operate this business as subsidiary company. It will acquire the personnel, both dedicated manufacturing sites, R&D assets and the underlying intellectual property of Valspar's North American industrial wood coatings business. The transaction is subject to the closing of the Valspar and Sherwin-Williams merger, as well as customary closing conditions and regulatory approvals, including the approval of the FTC and the CCB. Axalta has secured financing for the transaction through Deutsche Bank AG New York Branch, subject to customary closing conditions. Centerview Partners LLC acted as financial advisor to Axalta.

AkzoNobel Outlines New Strategy

Following two rebuffed attempts at a buyout by PPG, AkzoNobel has outlined a new strategy to accelerate growth and value creation with two of its businesses, Paints and Coatings and Specialty Chemicals. The intent is to produce a step change in value creation for shareholders and all stakeholders.

The company states, "The logical next phase of creating two separate companies builds on the strong financial and operational foundation developed in recent years. It will generate superior, faster and more certain value creation than the alternatives and with substantially fewer risks, uncertainties and social costs."

It intends the separation of Specialty Chemicals to take place within 12 months, and has project

AkzoNobel CEO Ton Büchner

teams in place. This will entail a dual-track process with active consideration of a separately listed entity, or a sale.

AkzoNobel aims also for a "focused Paints and Coatings business, with fit-for-purpose structure and processes." It also wants to accelerate sustainable growth and profitability, and expects to achieve €150-million in annual savings from ongoing continuous improvement programs in Paints and Coatings.

An additional €50-million is expected cost savings related to the separation of Specialty Chemicals, and it is underlining a continued commitment to sustainability, with an ambition to use 100 percent renewable energy, and be carbon neutral, by 2050.

Investment of €1 billion in research and development by 2020 to maintain focus on innovation and new product development

The 2017 EBIT, the company states, should to be around €100-million ahead of that for 2016, due to significant growth momentum across all business areas.

Ton Büchner, CEO of AkzoNobel, said in a statement, "Our commitment to substantial shareholder returns reinforces our belief that the plan we are outlining today will create a step change in value creation, generating significant shareholder value in the short, medium and long term. It will be delivered at pace, with a clear timeline and is in the best interest of all stakeholders.

"During recent years, we have consistently delivered on our commitments to improve profitability and growth, while building momentum within our company. We have world class teams and a solid financial and operational foundation."

"The industry-leading performance and outlook of our Specialty Chemicals business gives us the confidence to return proceeds to shareholders in advance of the separation. In addition, we see extensive growth momentum in our Paints and Coatings business, which we expect to keep growing faster than market rates, allowing us to improve our long-term financial guidance.

"Now is the right time to create two focused, high-performing businesses. This strategy will create substantial value for shareholders with significant less risks and uncertainties compared to alternatives."

Milliken Buys Keystone Aniline

Milliken & Co. has acquired Keystone Aniline Corp., a global supplier of dyes, pigments, pigment dispersions and polymers, headquartered in Chicago, IL. Both Milliken and Keystone currently provide colorant technologies to the agricultural, plastics, coatings, inks and household institutional and industrial markets

"This acquisition has far-reaching benefits for everyone involved," said Russ Rudolph, vice-president, performance colorants and ingredients for Milliken. "Our combined customers win through greater availability of proven colorant technologies and resources that can help them penetrate and grow new markets to gain a competitive advantage. Our suppliers can expect new opportunities that will allow them to play a greater role in serving our expanded organization. From a business perspective, we look forward to accelerating our growth and creating greater value."

Customers of the two companies rarely overlap because until now, they specialized in different product areas. With a core focus on polymeric colorants, Milliken's performance colorants and ingredients business is known for its proprietary chemistry and ability to synthesize new molecules, while Keystone has strong formulation skills and application development technology. Both firms are privately held, family-owned companies with long histories in the colorants industry: 97 years for Keystone and 152 for Milliken.

"By combining our product portfolios and specialized colorant knowledge with Milliken's solutions and expertise, we create business and market synergies that will drive new global opportunities and better meet the evolving needs of our customers," said John Andrews, CEO of Keystone. "The resulting organization will possess greater breadth and depth across the board, from research and development to formulation capabilities, quality control and product stewardship. This partnership will be a part of Milliken's future growth and success."

Manutrol Moves Offices

Manutrol Inc. has moved its offices from Montreal to Burlington, ON. Its new location, says owner

continued on page 11

ECOAT 18 Scheduled for Next April

ECOAT 18, the main technical conference for electrocoaters, will be held next year in the Tampa Bay area of Florida. The location is the Innisbrook Golf and Spa Resort, and the dates are April 24-26, 2018.

Presented by The Electrocoat Association and Products Finishing magazine, the objective of the conference is to support the expansion of electrocoat technology through the education of finishing industry personnel and those interested in the technology, both as a coating application and also a primer of choice for many other topcoat finishes. The event will feature technical presentations, concurrent workshop options, open-forum panel discussions, an exhibit room with tabletop displays, a hospitality evening, and an Industry Awards Luncheon.

Organizers are seeking abstracts for the two-day conference program. Speaking opportunities include keynote addresses, general sessions, panel discussions, and focused workshops on relevant issues faced by today's finishers. Suggested topics include: Part Design for Optimal Finish Performance; Considerations for Adding Electrocoat; Paint Types & Properties; Building Blocks of Successful Pretreatment; Best Practices for Improving Efficiency; Innovative Technology.

ECOAT Conference attendees include business owners and executives, operations and finishing managers as well as end users and those considering adding electrocoat. Full conference registration is complimentary for speakers, and there is a 50 percent discount for co-presenters. If a written paper is selected as the top end-user submission, there is an award of airfare and up to three nights' accommodation at Innisbrook. The deadline for submission of abstracts, which can be done online, is June 1.

Attendees listen to a seminar at ECOAT 16.

Gordie Howe Bridge to Proceed in 2018

Windsor's proposed Gordie Howe International Bridge will begin construction by summer 2018, it has been announced. The Windsor-Detroit Bridge Authority announced on May 1 that the last contracts for the preparation of the Canadian side of the span have been issued. These contracts are worth US$86-million.

Preparatory work at the Canadian port of entry for the bridge, which is planned to span the Detroit River between Detroit and Windsor, ON, includes removing transmission towers and relocating power transmission cables underground, in concrete-encased duct banks, the authority says. Other towers will be relocated.

The Gordie Howe International Bridge was first proposed in 2004. Last November, the WDBA announced it had issued a request for proposals to three teams chosen through an earlier request-for-qualifications process, for the bridge's design, construction, financing, operation and maintenance. The RFP process is expected to take 18 months.

The bridge will take either the form of a cable-stayed or suspension bridge, with two basic designs still being considered. The team that wins the contract will make the final decision on the bridge's final form. Earlier this year, the WDBA released plans for a pedestrian and bicycle element to the bridge and both ports of entry. The total cost of the bridge is unknown, though in early 2016, reports indicated that the price tag could come to about C$4.8-billion. The bridge would be the second above-ground crossing between Detroit and Windsor, joining the privately owned Ambassador Bridge. Ambassador owner Manuel 'Matty' Moroun has launched several lawsuits in an attempt to stop the new project, which will move traffic away from his bridge, and which is the busiest US-Canadian border crossing in terms of trade volume.

A conceptual impression of one design for the Gordie Howe Bridge. Photo: Crains

AkzoNobel Rejects New PPG Offer

The board of directors of AkzoNobel has firmly rejected a third merger proposal by PPG. The offer, worth roughly $29-billion, was dismissed after an assessment by the board of directors. In a public statement, AkzoNobel noted: "The extensive review and the meeting with PPG confirmed to AkzoNobel that its own strategy is better and does not contain the risks and uncertainties inherent in PPG's proposal."

This followed a meeting between AkzoNobel CEO Ton Büchner and supervisory board chairman Antony Burgmans, and PPG Chairman and CEO Michael McGarry who came with his company's lead independent director Hugh Grant. The meeting was held in Rotterdam, on May 6.

AkzoNobel has been reluctant about the idea of a merger since PPG's first offer some months ago. It has stated it plans to spin off its specialty chemicals business as a separate entity from its paints and coatings business.

PPG expressed disappointment over the response, and claimed that the Dutch company refused to negotiate. In its statement, it commented on being "disappointed that AkzoNobel has once again refused to enter into a negotiation regarding a combination of the two companies, ignoring the best interests of its stakeholders, including long-term shareholders who overwhelmingly support engagement."

PPG added that the AkzoNobel executives "stated up front that they did not have the intent nor the authority to negotiate." They also reportedly refused to respond to questions on their own company's planned split.

"The failure of the AkzoNobel Boards to engage with PPG to fully evaluate and discuss PPG's proposal reflects a continued lack of proper governance, and is another attempt to avoid a true comparison on stakeholder impacts of PPG's proposal versus AkzoNobel's standalone plan," PPG stated in its press release.

AkzoNobel's headquarters in Holland.

The merger proposal has been supported by a shareholder group led by the hedge fund Elliott Advisers, which moved to have AkzoNobel chairman Antony Burgmans removed at a meeting in April. AkzoNobel, in response, questioned the closeness of the relationship between Elliott and PPG.

Murray Steeves, is Suite 388, 1235 Fairview St., Burlington, ON, L7S 2K9. Tel: 416-200-3011.

The company specializes in size reduction, classifying and mixing equipment, and is the Canadian representative for Netzsch Premier Technologies.

OPA Golf Tournament Dates Set

The Ontario Paint Association's annual Golf Tournament is held this year on June 6, at Caledon Woods Golf Club in Palgrave, ON. It starts at 12.30 pm, with selection of golf carts, and there is a shotgun start at 1.00 pm. Dinner is at 6.30 pm.

Costs, until May 26 are $175.00 for golf and dinner, cart included; $120 for golf only, and $70 for dinner only. After May 26, these prices rise to $190, $130 and $80 respectively.

Hole Sponsors that make a prize donation in excess of $300 will be granted hole sponsorship status, and their names will be posted on the golf course. Those giving prize donations less than $300 will be recognized as a Prize Donation Contributor. OPA asks that you provide money for the prizes rather than actual prize items.

Those wishing to participate can contact Vanessa Finnie at L.V. Lomas, vfinnie@lvlomas.com.

RadTech Requests Conference Abstracts

RadTech International North America is inviting submission of abstracts for the RadTech UV+EB Technology & Conference 2018. This is scheduled for May 7-9, 2018, at the Hyatt Regency O'Hare in Rosemont, IL.

Those interested in presenting a technical conference paper no longer than 25 minutes in length, with five minutes for Q&A, should fill out the online Abstract Submission Form prior to September 8, 2017. The description should be sufficiently comprehensive to allow assessment of the scope and content of the paper by the conference committee. Speakers will be notified if they have been selected by October 13, 2017.

Speakers will receive an instruction manual providing details to help prepare written and oral presentation as well as audiovisual aids. They will be asked to use terminology consistent with the RADTECH UV Measurement Glossary when preparing papers, a copy of which can be accessed at www.radtech.org/into-to-uv-eb/uv-glossary.

The deadline for submitting final papers for publication is February 23, 2018. Speakers agree to submit a written paper to be published in the conference proceedings, as well as develop a Power Point presentation if presenting within a session, in order to be considered for the conference program. Questions or concerns can be directed to Mickey Fortune at 240-643-0517.

PEOPLE

Actega Names Marketing Executive

Actega NA, the North American division of global specialty ink, coatings, and sealants company Altana AG, has added Kristin Tripoli to its NJ-based marketing team. She will be managing Actega's North American trade show presence as


Kristin Tripoli

well as developing advertising programs, product launches, website and digital platforms, and collateral materials for the company's five market segments: paperboard packaging, print & commercial, labels, flexible packaging, and rigid packaging.

"The addition of Kristin to the team rounds us out nicely," said Bernadette Corujo, head of marketing and brand owner management. "From a strategic position, hiring Kristin should help us move the needle for our various divisions and help us connect on a deeper level with our customer base, benefitting not only our organization but our valued clients as well."

Prior to joining Actega, Tripoli spearheaded the marketing efforts for both global and domestic B2B and B2C companies. She is a cum laude graduate of Tufts University.

Actega develops and produces specialty coatings, inks, adhesives and sealing compounds with a focus on the packaging, printing and medical industries. It is one among four divisions of Altana.

AkzoNobel Selects Surface Chemistry Manager

Jeff Jirak has joined AkzoNobel as the company's new surface chemistry general manager for the Americas. He comes to AkzoNobel from the DuPont spin-off Chemours, where he most recently served as vice-president and general manager of fluoroproducts diversified technologies. There, he led a $450-million portfolio of five global businesses.

Prior to Chemours, Jirak spent 23 years in multiple business segments of DuPont, spanning a wide range of roles in manufacturing technology, operations leadership, supply chain management, sales and marketing, product and brand management, and business strategy.

IGM Resins Appoints Sales Director

IGM Resins USA, Inc., a global producer and supplier of radiation curable materials, has appointed Tony Pirro sales director for North America. He will be responsible for driving new business development through IGM's direct sales team and distribution partners in the US, Canada and Mexico. USA-based sales managers report to him, and he reports to vice-president North America, Patrick Maloney.

"I am excited to add Tony's leadership and

industry experience to our team," said Maloney. "His knowledge of UV materials for printing inks, coatings and adhesives, and their applications in specialty markets such as digital printing, fiber optics and optical disks will help us anticipate trends and commercialize new products to enable our customers' growth."

Pirro joined IGM from Troy Corp., where he served as global business director – metal carboxylates. He spent most of his 27-year career in sales and business management positions of increasing responsibility for DIC International (USA), LLC, a subsidiary of global ink and chemicals company DIC Corporation. He also served in sales management roles for the Shepherd Color Co. and Amitron Products, Inc. He earned a Bachelor of Science degree in Business Administration from Susquehanna University.

BASF Appoints New President

Dirk Bremm is the new president of BASF's Coatings division. He succeeds Dr. Markus Kamieth, who was appointed to the Board of Executive Directors of BASF SE. Kamieth had led the Coatings division since 2012.

Bremm joined BASF in 2000 in Ludwigshafen, Germany. After holding different positions in various segments of BASF Group – including head of business management, polyamide and intermediates Europe in Ludwigshafen, and vice-president of BASF Coatings Solutions in Tultitlán, Mexico – he served as senior vice-president for Construction Chemicals Americas in Beachwood, OH.


Dirk Bremm, new BASF CEO

CFCM Annual Buyers Guide

Canadian Finishing and Coatings Manufacturing magazine is now compiling its Buyers Guide for 2017. The Guide has comprehensive listings of companies active in the Canadian marketplace, for all types of coatings and plating.

This includes:

- Industrial Finishes
- Industrial Finishing Equipment
- Paint and Coatings Raw Materials
- Paint and Coatings Manufacturing Equipment Services
- Custom Coaters and Job Shops

and

- Associations, Educational Facilities and Government.

If you are already listed in the Guide, you need to update your free listing for 2017. If you've not been previously listed, then you need to create one. In both cases, you can go online at:
http://www.cfcm.mercuryemail.com/UserUpdates/AddNewCompany.aspx

Simply complete the online form, and submit it, and you're done! There's no charge for companies legitimately involved in the coatings industry.

Calendar of Industry Events

June 5-8, 2017: Dempsey Corp. Cross-Canada Seminars, in Quebec City, Winnipeg and Toronto. www.dempseycorporation.com

June 6, 2017: Ontario Paint Association annual Golf Tournament, at Caledon Woods Golf Club. vfinnie@lvlomas.com.

June 19-21, 2017: SurFin 2017, Georgia World Congress Center, Atlanta, GA. www.natsurfin.com

September 12-13, 2017: CanWeld Expo, Place Bonaventure, Montreal. www.canweldexpo.com

September 17-20, 2017: Photopolymerization Fundamentals 2017, St. Julien Hotel, Boulder, CO. www.radtechintl.org

September 19-20, 2017: IHEA 2017 Fall Seminars, Westin Poinsett Hotel, Greenville, SC. www.ihea.org

September 19-21, 2017: Aluminum Anodizers Council Conference, Westin Westminster Hotel, Westminster, CO. www.anodizing.org

October 4-5, 2107: Canada Woodworking West 2017, Tradex, Abbotsford, BC: www.canadawoodworkingwest.ca

October 31-November 2, 2017: The Chem Show, at the Jacob Javits Center, New York, NY. www.chemshow.com

November 2-4, 2017: WMS 2015, the Woodworking Machinery & Supply Expo, International Centre, Toronto. www.woodworkingnetwork.com

November 6-9, 2017: Fabtech 2017. At McCormick Place, Chicago. www.fabtechexpo.com

November 15, 2017: Canadian Association for Surface Finishing, annual conference, Hilton Garden Inn, Vaughan, ON. www.CASF.ca

April 24-26, 2018: ECOAT 18 Conference, Innisbrook Golf & Spa Resort,Tampa Bay, FL. www.electrocoat.org

Communication, Cooperation and Results

Global Focus

As a member of the International Paint and Printing Ink Council (IPPIC), CPCA contributes to and promotes the Council's advocacy and policymaking efforts on all matters of international concern to the industry. CPCA was proud to host the 2017 IPPIC Annual Meeting in Victoria, B.C. in late February. During the week-long event, CPCA, along with its sister organizations from the US, Australia, Brazil, China, France, Germany, Japan, Mexico, Turkey, European Union, New Zealand and the UK, tackled key issues that are top of mind for industry including variances concerning the Globally Harmonized System for Classification and Labelling of Chemicals in the workplace; ongoing challenges with indoor air quality and paint emissions; nanotechnology standards monitoring; proposed TiO2 REACH classification in Europe; ongoing marine coatings activities; the creation of the Responsible Mica Initiative and other areas of interest to the global coatings industry. IPPIC has now completed a Public Affairs Plan to address global issues impacting all countries now and/or in future. This will allow the coatings industry to ensure that members operating in multiple countries have consistency with respect to the positions taken on the relevant issues.

New Red Tape Challenge

Ontario's Red Tape Challenge is the provincial government's latest undertaking to help businesses save time and money by cutting red tape. It proposes to do this by addressing the long-standing regulatory burden in the province with support from key sectors including chemical manufacturing, one of the six chemical sectors chosen. CPCA, for its part, is participating in this initiative and has already gathered members' views on regulatory challenges to ensure their concerns are conveyed during the process. It is hoped that such critical feedback from members will help the government improve, modernize or eliminate unnecessary regulatory burden in the province.

This latest endeavour could lead to better outcomes for industry, government and the public at large. The government maintains the Red Tape Challenge is part of Ontario's $400-million Business Growth Initiative, which is

the government's new economic effort to fast-track the province's knowledge-based economy by tapping into the creativity, education and skills of Ontario residents. Whether it succeeds or not is open to debate, but industry must make the effort to reduce red tape when there is an opportunity to do so, and we will.

Call for Industry Expertise

Industry input is critical when the federal or provincial governments seek expertise on the creation or implementation of various frameworks or approaches, such as regulatory frameworks related to chemicals management, predictive models and tools, or new approach methodologies. A case in point is the Chemicals Management Plan (CMP) Science Committee that recently called on industry to provide comprehensive expertise in a number of scientific fields including health and/or ecological risk assessment. Since 2013, the Science Committee has been providing input on scientific considerations in the delivery of the CMP, completing its first term last fall. The second term is now active and CPCA members have been invited to take part in the discussions.

The CMP Stakeholder Advisory Council, of which CPCA is a member, is looking at ways to address human health and environmental concerns related to risk management measures and performance indicators. One approach will be focused on the CMP structure and the other on process and the second will highlight chemical decisions and risks.

Concerning risk management, the federal government recently launched a survey for 85 CMP substances. CPCA informed members that the survey aims to assess the current control efficiency of substances or how they can be controlled. The government also launched a consultation on the risk assessment approach for specific substance groupings. By participating in the consultation process, CPCA members can help government identify options to reduce impacts of a substance while at the same time allowing continued commercial use of the substance for product formulations. Without data supporting such options, substances will end up with highly restricted use or banned outright.

CPCA also informed members that Environment and Climate Change Canada and Health Canada issued a summary of risk management actions focusing on risks associated with all toxic CMP substances between January 2006 and July 2016. CPCA's work with members continues looking into the implications for the coatings industry, including adhesives and sealants, which have been targeted and produced by a large number of members.

CPCA created and regularly updates a database that provides detailed information on CMP-Phase 3 groupings that are of concern for coatings companies. In particular, it gives members information on which substances and polymers they should pay close attention to between now and 2020. The association will keep an eye on and review any changes applicable to the groupings that concern members over the course of the year.

The federal government recently updated its inventory of chemicals in commerce and these substances will be at the centre of CMP activities when the program's third phase ends in 2020.

Further inventory updates of chemicals will likely focus on the same number and list of substances. Companies must report these substances, specifically on 1,550 substances. The government conducts inventory updates for substances found on the Domestic Substances List, which is the sole standard against which a substance is judged to be "new" to Canada. Moving forward, Ottawa noted that the inventory updates will also consider substances identified by emerging science, domestic and international regulatory programs, as well as changes in the Canadian commerce. The drive toward regulatory assessment continues at a rapid pace in the coatings sector.

Improving Emergency Response Plans

Transport Canada's Emergency Response Task Force recently issued its final report and recommendations on the Emergency Response Assistance Plans Program (ERAP), which describes what should be done in the event of a transportation accident involving certain higher-risk dangerous goods. The ERAP is required by the Transportation of Dangerous Goods Regulations for dangerous goods that need special expertise and response equipment in the case of an incident. Following a review of the recommendations, Transport Canada will propose regulatory amendments and guidance materials after formal consultations. In line with other government consultations, industry is being asked to share ideas on how the ERAP program can be improved further. CPCA is gathering this information on behalf of the coatings industry.

The association advised members that Transport Canada is also seeking feedback on the standard for containers in the transport of dangerous goods by rail and on the amendment for marine provisions in the transportation of dangerous goods regulations. This will be important for paint and coatings given the volume of goods in the sector.

Ontario's Quest to Up its Game on Waste Reduction Continues

CPCA recently filed a submission on Ontario's Transitional Operating Agreement between the Ministry of the Environment and Climate Change. In this document, CPCA made eight recommendations that address specific issues pertaining to the following:

- Sound governance of the Oversight Authority
- Cap on costs of the Authority's operations
- Stronger input by obligated stewards
- Real collaboration with obligated stewards for effective implementation
- Proper costing of actions to

achieve goals
- Uncomplicated and cost-effective data collection
- Reimbursement of overpayments made by existing stewards to Stewardship Ontario

CPCA reiterated that the Canadian paint and coatings industry is committed to paint stewardship with successful programs in every province. The industry recovered 27-million kilograms of leftover paint in 2016. It has also proven its commitment to full Extended Producer Responsibility programs, from collection to processing to transportation to recycled paint at the point of sale. Producers, the legally designated obligated stewards for leftover paint in Ontario, pay 100 percent of the required funding. The bottom line is that the paint and coatings industry is following through on plans to increase resource recovery effectively and efficiently. The hope is that all this will lead to optimal business practices, happy consumers and lower prices for taxpayers. We will only know if the Ontario government has succeeded in this latest endeavour under the Waste-free Ontario Act in a few years. Industry will be watching closely as to the success of the Act vis-à-vis the increasing costs.

VOC Best Practices

Canada has more than one million kilometres of roads and highways, almost half of which are paved. The material of choice for paving roads is asphalt. Industry must be aware of the federal government's code targeting the reduction of emissions from cutback and emulsified asphalt. The code includes recommended best practices related to materials for paving, construction and maintenance of highways, roads, parking lots and driveways. CPCA reported that asphalt use in Canada and the related VOC emissions is just one of seven categories identified by Environment and Climate Change Canada for further VOC reductions. Other categories include aerosol paint products and industrial adhesives and sealants.

The coatings industry must remain conscious of the growing global regulatory activity and supplier divestments, which continues to impact the coatings and refinishing industry. The growing trend towards VOC-free coatings is creating a global need for improved biocidal protection systems and is increasing demand for dry-film preservatives in low-VOC exterior coatings. Recent US and EU regulatory developments are impacting biocides, as fewer options for preservatives exist and the use of preservatives with more than one active ingredient is rising and becoming more expensive. ■

BE A PART OF

THE SURFACE TECHNOLOGY INTIATIVE

NATIONAL ASSOCIATION FOR SURFACE FINISHING
NASF

SUR/FIN®
Manufacturing & Technology Trade Show & Conference

JUNE 19–21, 2017
ATLANTA, GEORGIA
GEORGIA WORLD CONGRESS CENTER

LEARN
technical solutions for greater supply chain efficiencies and less down time.

INNOVATE
with new surface finishing technologies and applications to enhance performance.

DISCOVER
new trends and special application techniques to prepare for future requirements.

EXPLORE
the many industries surface finishing impacts and recent developments within them.

RESPOND
to increasing OEM demands with targeted techniques to meet their needs.

SUPPORT
the progress of surface finishing by implementing sustainable technologies.

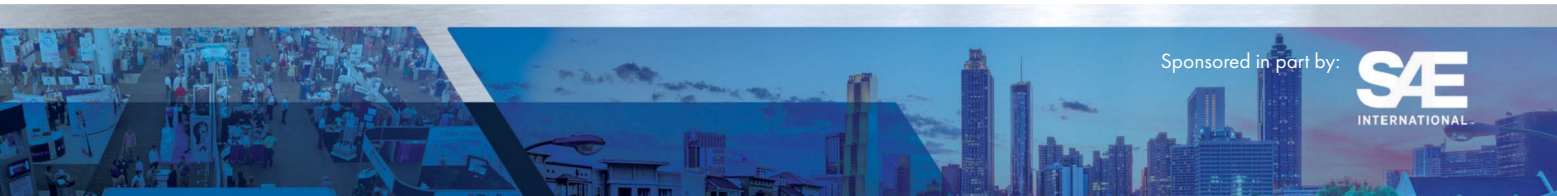
IMPROVE
productivity by reviewing the basics and identifying areas of opportunity.

STRATEGIZE
with area experts to explore alternatives and refine operations.

- 84 presentations in 14 sessions
- More than 175 exhibitors
- 2,500 surface finishing professionals
- Complimentary sessions & networking opportunities
- And don't miss our Industry Night event: Tuesday Night Tailgate with private access to the College Football Hall of Fame!

Only one Trade Show & Conference focuses solely on surface finishing: SUR/FIN. Sign up today to take advantage of opportunities to grow your business and build valuable partnerships in the heart of the South. Join us June 19-21 in Atlanta!

REGISTER TODAY ON NASFsurfin.com



Sponsored in part by: SAE INTERNATIONAL

Demand for Throughput Boosts Automatic Plating

SHORT RUNS IN PLATING rule out cost-effective automation. But increasingly, as automated systems become less expensive and more versatile, a widening range of options is entering the plating market.

The never-ending drive towards quality finishes is driving this side of the business as much as basic economics. Platers need to establish their proficiency in the niches they focus on, and today's automation systems are a key tool for achieving that.

"We see growth in automatic systems for plating," says says Jim Long, director of sales and marketing with Jessup Engineering. "The plating market is very price competitive, and companies have to efficiently use natural resources as well as maximize plating throughput. With each system that Jessup manufacturers, the focus is on automation, productivity, and traceability."

Jessup's computer controls, he adds, automatically monitor, store, and export load by load quality data for immersion times, tank temperatures, rectifiers settings, chemistry adds, rinse water replenishment, barrel rotation/oscillation, ventilation/air make-up, and wastewater.

"The goal is to install advanced machine features with complementary controls," he says, "to enable precise resource management, reduce operator input errors, and eliminate manual quality monitoring/reporting reducing labor costs."

Jessup Engineering works with each customer to develop an operational plan to minimize downtime and maximize throughput. Usually, Long says, the biggest challenges in implementing automation are financial planning and scheduling downtime.

"Cost estimates for automation can range from thousands

A Jessup Engineering plating system with a 1000-lb hoist.

of dollars to multi-million expenditures for a complete line replacement. Both take analysis and planning to determine the project scope with the best payback," he explains.

The company uses a simultaneous engineering approach to improving throughput. Factors taken into consideration include: rack and barrel design optimization; system layout; ergonomic load/unload areas; and bar-coding of part recipes

"All of these factors coupled with state of the art computer controlled automation enable job and captive plating shops to provide consistent plating results and be cost competitive," Long says.

Corrotec is another player in this particular market, and offers automated hoists systems as well, with hoist capacity up to 10,000 lb. These feature state-of-the-art electronics and offer minimized maintenance requirements.

A belt-lift mechanism offers zero to 60 fpm lift/lower, and a direct-drive transfer offers zero to 200 fpm transfer, with laser-based horizontal positioning for the hoist.

Other features include a variable frequency drive system for the hoist's lift/lower, slack cable safeties and a station-occupied sensor. There are also hoist collision safeties, shuttle interlocks, and hoist end-of-track safeties.

"Ergonomic or automated load/unload equipment and remote support features are also available," says Corrotec president Dave Stratton. Corrotec also offers return type machines, which are employed where extremely high throughput and detailed data logging are essential.

"The difference between an automated hoist line and a return type machine," Stratton says, is that "a return type offers high throughput but low flexibility, while a hoist line offers less throughput and high flexibility. A return type machine works well for long production runs, while an automated hoist line is ideal for short runs."

The company's return type machines feature computer controls, automated or manual ergonomic load/unloading, delayed set-down, advanced pick up, cycle selector, lubrication systems, a built-in rack strip, built-in parts dryer, and vertical rack agitation. They also feature a positive chain drive, which can be designed to handle a wide variety of loads.

The system is also available with carrier arms in single or multiple rack arrangements. With advanced pick-up and

CASF CONFERENCE 2017:
Surviving or Thriving in the Trudeau and Trump Era

We are living in politically charged and uncertain times! CASF Conference 2017 is an excellent opportunity to discuss with fellow industry finishers, suppliers and professional service providers if they are 'just surviving or happily thriving' in today's environment of rising taxes, regulation and red tape. More importantly, what decisions can you make today that will help to secure the future of your business? Our expert speakers will educate you on the latest trends and developments affecting our industry. Don't miss out on Canada's premier one-day surface finishing event!

Wed Nov 15, 2017
8:30am – 4:30pm
(Registration opens: 8:00am)

Hilton Garden Inn Toronto, Vaughan
3201 Highway 7 West, Vaughan, ON

Early Bird Registration:
Before Oct 1, 2017

Attendees:
CASF Member Attendees:
$225 ($275 after Oct. 1)
Non-CASF Member Attendees:
$275 ($325 after Oct. 1)

Exhibitors:
CASF Member Exhibitors:
$450 ($550 after Oct. 1)
Non-CASF Member Exhibitors:
$600 ($700 after Oct. 1)

Your conference fee includes:
Access to all guest speakers and presentations, continental breakfast, refreshments, and buffet lunch.

Space is limited! Register today to confirm your attendance.
For more information on event details and registration visit **www.CASF.ca**

Topics and Guest Speakers:

Special Guest Speaker and Keynote Address: Christian Richter, Executive Vice President, National Association for Surface Finishing (NASF) and President, The Policy Group in Washington, DC.

Christian will provide an insider's glimpse into American politics and their potential impact on Canadian business and policy making in addition to a global perspective on surface finishing.

Government Programs Designed to Aid Manufacturers with GHS Emissions Reductions
Nancy Coulas – Director, Energy & Environment Policy Canadian Manufacturers & Exporters (CME)

Canadian Industry Programs for Energy Conservation & Incentives.
Richard Dollighan – Sr. Industrial Officer, N.R. Canada / CIPEC

Advances in Recycling & Recovery Technologies in the Finishing Industry
Allen Hayes – President of Chemtech Systems, Muskegon, Michigan

CASF Update & Canadian Environmental/Regulatory Outlook
Michael Kuntz, Bob Smith – President/VP, CASF
Stephanie McCallum – Government Liaison, CASF

Changing Materials Without Reducing Performance Keith Legg – Chief Technology Officer, Corrdesa LLC

New Technology Overview in the Surface Finishing Industry
Dr. Sebastian Kuehne – Engineering & R&D Manager, Atotech

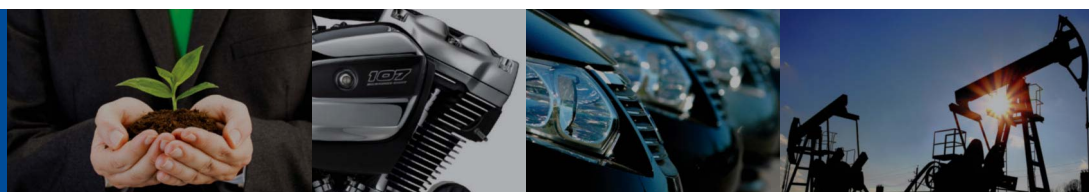
Economic, Financial & Commodity Markets Outlook
Sarah Howcroft – Economist at BMO Capital Markets

Nickel Development: Research & Risk Update
Dr. Hudson K Bates – Executive Director & Toxicologist, NiPERA

…and other important topics that are affecting our industry today!

Who Should Attend?
Business owners, supervisors, managers, continuous improvement and environmental systems personnel, sustainability managers, and employees, consultants or professional service providers responsible for reducing costs and liabilities through innovative surface finishing technologies.

CASF
Canadian Association for Surface Finishing



delayed set-down, carrier arms may be lifted independently to meet different specifications during one machine cycle.

It has a PLC based control system; process control data collection and reporting.

American Plating Power produces a range of controls for automated plating operations. Its Standard Remote Controls are used for switch mode power supplies and thyristor rectifier devices with analog or digital measuring instruments.

The remote control panel is built into a shock and corrosion resistant casing with a transparent plastic cover to protect the integrated measurement and operating components. This unit, the company says, is designed for wall mounting and therefore includes special hinge technology for easy installation.

The MFD 10 Process Controller is recommended for almost every type of rectifier and electrochemical process. In addition to the basic functions (current and voltage control, ampere-hour meter, timer and set-point ramp) there are three different functions available.

These optional functions, the company states, are Version 2.0 which includes a V pilot; Version 3.0 which includes an (unipolar) pulse; and Version 4.0 which includes a polarity reversal and (bipolar) pulse. There is an electronic precision set-point for pre-setting the process current and voltage, and a corrosion-resistant polystyrene enclosure for use in industrial environments.

Another system from American Plating Power, the AS 100, is claimed to increase productivity and improvements in quality, compared to a conventional voltage/time or current density controller. Basic control is realized with just two buttons, simplifying operation and saving the operator plenty of time.

AS 100, the company adds, can be combined with all conventional rectifiers with thyristor, switch modes, and variable transformer technology. The optional Pro Ano Windows-based software provides process data logging and allows real-time verification from the main control room.

The system automatically takes on monitoring and logging duties, improving productivity and reducing errors. It can be connected to any standard rectifier with an output voltage of > 20 V and an analog interface. The integrated current density characteristic has been specially designed for aluminum alloys and the creation of decorative oxide layers.

Another American Plating Power system, the HS 100 Process Controller, is for type III hard anodizing of aluminum. It can be combined with all conventional rectifiers with thyristor or variable transformer technology.

The system provides the flexibility needed for the different requirements for successfully anodizing various aluminum alloys. In addition to the standard DC mode, various pulse patterns can be applied to the load being anodized.

By means of the program buttons, an operator can activate one of the 24 available programs, each of which can consist of up to 10 steps. The desired current or voltage value can be individually defined for each step of the process. A user can

A Corrotec return type machine.

generate a single polarity pulse pattern by means of the function pulse, the minimum pulse time being one second.

Anodize USA has introduced its PAS II~III technology, which offers anodizes a new method to calculate the square footage of parts, and the necessary amps per square foot. This has long been considered the fastest and most accurate way of anodizing parts, but working out the square footage of the parts and the load size could be a time-consuming task.

The new remote digital version of PAS II~III will, the company says, send an even more accurate (ASF) signal to the power supply than did previous versions. The DC power supply can be over 50 feet away, and the signal can pass through walls. The remote read, the company adds, is simple, easy and requires no wires.

At the start of the run, the operator sets the desired ASF ramp time. The PASS II-III includes, if needed, a five-step ramp with total run time based on the 720 rule.

The system consists of a hanging rack and meter with a one-sq ft, removable aluminum load panel (a choice of alloys is available) that allows the operator to dial in exactly the desired ASF.

The set time based on the 720 rule is for 6000/5000 alloy. For 2000 and 7000 series alloys, operators must deduct five to six percent from the required time.

Automating a plating or anodizing operation is, like any automated installation, a process to be entered on carefully, and after extensive conversations with suppliers. Once put in, an automated system will also require a period where staff learn to use it properly, and find out its real benefits.

Properly conducted though, it can be a way to broaden a company's ability to serve its customers and broaden the niches it serves. ■

Today's Wastewater Management

WASTEWATER ELIMINATION and control is a perennial concern for all aspects of the coatings industry. Capturing toxic waste streams is expensive and essential, and keeping filtration and purification equipment up to scratch is not an area of the business in which to cut corners.

Many things can end up in waste streams, not just effluents or by-products. Any paint or powder coating operation will lose a certain amount of material this way, and different jurisdictions approach such problems in different ways.

The topic was a concern at the Powder Coating Technical Conference in Indianapolis in March. Martin Korecky, a marketing specialist with AkzoNobel Coatings, pointed out that not all regulatory agencies use the same regulations or standards.

" Local laws can be more stringent than national ones," he pointed out. "And you also have to deal with people interpreting the spirit of the law versus the letter of the law."

The relevant AHJ (Authority Having Jurisdiction) can be staffed by knowledgeable people, he said. It can also be staffed by people who have no prior experience with the contaminant in question.

While Korecky's point was made to powder coaters, the same principles apply with plating and anodizing. Companies need to know not just about their own processes, but about how they might be viewed by outsiders, or people charged with public safety.

Chemical isolation and filtration is proven approach to eliminating certain metallic materials from a wastewater stream. Bentonite clay-based formulations, for example, have long been used to separate oily contaminants from wastewater, and to precipitate metallic hydroxides.

These react ionically with non-precipitated heavy metal cations, and encapsulate the contaminants forming a non-hazardous waste. The procedure is simple, one step, and can be accomplished by either manual or with completely automatic equipment.

A. Brite Co. offers a range of these, along with its EnviroBrite compounds, which similarly deal with heavy metals in aqueous mediums. For example, its EnviroBrite WTC-815 is a proprietary, concentrated liquid material that provides stronger coagulation and floc action than is possible from inorganic iron and aluminum salts.

It produces large, rapidly settling floc, the company says, yet reduces sludge volume. It is recommended for breaking highly chelated waste streams, substantially reducing sludge and removing turbidity in the water.

Another EnviroBrite compound, Dropout, is a highly concentrated liquid designed to precipitate heavy metals from aqueous mediums. Solutions treated with Dropout provide heavy metal precipitates that have much lower solubility, and generate less sludge, than their respective sodium and magnesium hydroxide precipitates. They are, A. Brite says, effective over a wide pH range.

For actual filtration of wastewater or grey water for water recovery, it offers the Auto Filter. a compact, dual-tank integrated system. Processing up to 4,500 GPD, this system can recover contaminant free water up to 95 percent of original volume without the use of chemicals.

Typical applications include water recovery from spent coolants and oil contaminated wastewater, mop water, compressor blow down, and refrigeration condensate recovery. The company's high capacity UF systems employ parallel channel, high flow spiral membrane technology to separate water from suspended solids and emulsified oils. With process rates available up to 6000 GPD, these membrane systems are designed for continuous applications in harsh environments.

Among a wide range of systems, it also offers its DUF systems, which utilize use the process of Dissolved Air Flotation, with added Ultrafiltration technology for final polishing of effluent. These hybrid systems are designed to treat waste streams normally considered too difficult for membrane systems alone due to high oil and grease, and solids loading.

The design allows for a much smaller footprint than conventional clarification/separation systems and separate membrane post treatment. Nano-filtration and reverse-osmosis elements can also be utilized.

Reverse osmosis systems are often described as offering the most trouble free, cost effective, and reliable way to generate high quality process or drinking water. A. Brite's systems use spiral membrane technologies for efficient low cost operation, offering a wide range of flow rates.

Kontek has made fully automated self- regenerating ion exchange industrial wastewater recovery systems since 1980. Its ReKon ion exchange systems remove dissolved heavy metals and salts from wastewater and produce de-ionized water for recycling, and the company says it can help metals finishers come closer to achieving a Zero Liquid Discharge facility (ZLD).

The process is claimed to consistently remove and ReKon systems feature a duplex design to ensure completely continuous operation. Systems can be designed with flow rates from two 1,000 gpm, and Kontek says its standard design uses up to 50 percent less water to regenerate, compared to competing designs.

The method uses premium proprietary resins, and UV sterilization systems are standard. Designs with reverse or co-current regeneration cycles are available. There is a skid-mounted modular design, with customized design available as an option.

Organic and metal contaminant stripping cycles of resins are

A Kontek ReKon ion exchange system

ALAR Auto-Vac system.

standard on all ReKon systems, and PLC/HMI interface controls feature real-time data collection and maximum flexibility.

The company offers optional automatic batch treatment systems or flow through wastewater treatment systems to treat non-recoverable wastewater and regeneration waste can be incorporated and controlled from the ReKon main control panel. It also has optional electrowinning heavy metal recovery systems can be incorporated and controlled from the ReKon main control panel.

ALAR Engineering Corp. is another supplier with a range of filtration equipment to deal with metals extraction from wastewater. By definition, the company says, "a heavy metal has a specific gravity of about 5.0 or greater and is usually poisonous when present in your wastewater. The term heavy metal, however, is often broadly applied to include other potentially hazardous elements, even if they do not meet the strict chemical definition."

This would include arsenic, cadmium, chromium, lead, nickel and selenium. The company specializes in zinc, copper, nickel and chrome heavy metal wastewater removal through its wastewater treatment equipment. The primary system chemically adjusts pH levels to precipitate the dissolved metals into suspended solids, which are captured by a mechanical filter.

Its Auto-Vac and Flex-O-Star systems feature rotary vacuum precoat filter technology for removal of heavy metals. Otherwise, a combination of Lamella Clarifier and the Micro-Klean filter press are its standard methodologies. In all scenarios, chemical treatment of the wastewater is necessary prior to filtration.

Dealing with toxin effluent is no plating shop's favorite way of using its cashflow. But the available technologies broaden every year, and careful selection of the newest ones can offer some surprising economies in managing wastewater. ■

Zinc and Zinc Alloys

Photo: www.nevadazinc.com

AS ONE TECHNOLOGY hits the sunset trail, so does another come in to replace it. The toxicity issue surrounding hexavalent chrome is far from the only driver pushing zinc and zinc alloys in plating, but it has given a push to them.

Much of the pressure to change technologies has come from European automotive OEMs, since the concern over chromium has received more attention on that side of the Atlantic. But these days, no such environmental or health issue stays in the place where the concerns begin, and the phase-out of hexavalent, and the move to trivalent chrome or to alternative metals, is well under way.

Zinc alloys in particular have been successful in the area of replacement. Their impact can be traced back three decades to the introduction of zinc with about 0.5 percent iron, and zinc with six percent of nickel.

More recently, the End of Life Vehicles Directive in Europe has pushed for wider use of higher alkalinity ZnNi, with up to 15 percent nickel. Zinc can act as a sacrificial anode when plated on steel, the steel being preserved from corrosion by cathodic protection.

"The preferred alloy composition for zinc-nickel plating is 12 to 15 percent nickel," says metals supplier MacDermid Enthone, "with the remainder being zinc. This alloy gives exceptional sacrificial corrosion resistance and can be readily passivated.

"To achieve this alloy, zinc-nickel is usually plated from an alkaline electrolyte. For some applications, including the plating of brake castings, acid zinc-nickel can be used."

The company states that its Enviralloy and Kenlevel zinc-nickel plating processes offer both excellent corrosion resistance and good alloy distribution, as well as excellent alkaline deposit distribution. They are compatible with TriPass hexavalent chromium-free passivates, and with TriPass 7000 series cobalt-free passivates. Their friction properties can be modified with Torque 'N' Tension fluids.

Enviralloy materials, it states, offer a process that is easy to operate and control in volume production, and is suited to both rack and barrel applications. Under optimum conditions, its high cathode efficiency ensures that fast plating rates can be achieved without high current density burning, dramatically improving production output.

MacDermid Enthone stresses its experience with plating systems for brakes. Its Kenlevel Ni 12-15 avoids the need for duplex coatings that are normally applied in plating of brake calipers using an alkaline-based zinc-nickel. It offers substantial benefits, the company says, over earlier acid zinc-nickel plating alloy technology, particularly in the consistency of both the deposit and the alloy distribution. This can prove critical in plating complicated castings.

MAR Tech Holdings Inc. is a player in this market with its MAR Zinc Pro line. MAR Zinc Pro ES 97 process is, the company says, a maximum performance plating system that is a true advancement in chloride zinc plating, offering super bright, lustrous, ductile, fine-grained deposits without burning, staining or whiting out, over the entire plating range. The formulation is designed to provide uniform deposit distribution similar to that of alkaline baths. It takes advantage of separate make-up components for racks and barrels, since these two processing techniques require distinct additives for maximum performance.

The process requires little control and is very tolerant to a high concentration of dissolved iron, bath impurities and general abuse. This, in turn, substantially reduces rejects, downtime and maintenance.

Additionally, the process contains a built-in ductilizing agent, making it ideal for plating heavy thicknesses. Plated deposits remain ductile so there is less chance of chipping, flaking or cracking. It also provides a receptive plated surface that accepts trivalent chromate films more readily than competitive processes, allowing the trivalent chromate film perform to its maximum capability regarding salt spray protection.

Another company product, MA R Zinc Pro ALK 100, is an alkaline non-cyanide zinc plating system with the distribution advantages of alkaline zinc systems, while approaching the efficiency advantages of chloride zinc. It eliminates, the company states, the need for costly extra additives, and is packaged as a simple-to-operate, three-component system.

This product is claimed to remain stable at high caustic concentrations, and will perform at up to 110 deg F. Its three component additives are a brightener, a carrier and a purifier.

The company states it presents no latent blistering nor blue bright yellowing, and offers both excellent plate distribution and excellent throwing power, as well as high cathode efficiency.

Dynamix Inc. also offers a range of zinc alloys. (Site inaccessible).

Atotech's offering for this market is its ZnNi XL processes. These combine the company's alkaline zinc nickel electrolytes with membrane anode technology.

The membrane prevents the decomposition of organic compounds at the anode and inhibits the formation of cyanide. Through this process, the company says, the formation of breakdown products can be completely avoided.

Membrane anode technology also allows for reduced consumption of additives and an extended bath life. The deposition rate is claimed to be 30 to 50 percent higher than in conventional installations, and the quality of the deposits can be maintained at a constant level during production.

Atotech also offers Recotect, a flexible regeneration system for alkaline zinc nickel electrolytes. Through the efficient removal of by-products such as cyanide generated by the decomposition of electrolyte components, this enables users to maintain consistent plating quality, high current efficiency and higher productivity throughout the zinc nickel electrolytes' entire lifetime.

Recotect, the company says, can be easily installed into existing plating lines. The plating parameters of the electrolyte can be adjusted and maintained, enabling a better plating quality.

Palm Inc. is offering zinc ball anodes made of a special high purity grade containing a minimum of 99.99 percent Zn. Melting and casting of the zinc is carefully controlled to prevent iron pickup and the introduction of other impurities.

The balls, the company states, are solid and clean, and do not have any flash or gates that could cause basket hang ups. The balls measure 50.8 mm, or two inches, in diameter, and are supplied to ISO Standard 752-1981 Special High Grade

Photos: MacDermid-Enthone

Zinc-plated metal studs.

Zinc plating using racks.

(SHG) specifications. In addition to trace metals, that make up to 0.01 percent of the anodes, phosphorized anodes also contain a small amount of phosphorus.

Dynamix Inc. offers a range of about a dozen zinc products and zinc alloys. Dynaplate CLZ is a new-generation product that the company says is an extremely bright and ductile chloride zinc system for rack and barrel plating. It is a two-part system designed for use in non-ammonium, ammonium or mixed chloride zinc plating baths.

The Dynaplate NCZ range of alkaline zinc alloys for electroplating that are non-cyanide. NCZ Ni 100 is for electroplating, reportedly offering excellent throwing power and covering power. It produces a deposit consisting of a uniform zinc alloy containing 12 to 18 percent nickel, and corrosion protection up to four times that of a zinc deposit.

Ni200 is also said to offer excellent throwing and covering power. A deposit consists of a uniform zinc alloy containing five to eight percent nickel, and corrosion protection is up to four times that of a zinc deposit.

Ni300 is a zinc nickel alloy for barrel electroplating process offering a deposit consisting of a uniform zinc alloy containing five to nine percent nickel, and corrosion protection up to three times that of a zinc deposit. And Ni400 has 12 to 18 percent nickel. This process, Dynamix says, will meet the requirements of ASTM F519 for non-embrittling of high strength steels, and provides corrosion protection up to four times that of a zinc deposit.

The final outcome with any plating process, of course, depends on the plater's skill and the quality of the equipment used. However, it is plain that the range of zincs and zinc alloys available today makes the job a whole lot easier. ■

Variety Broadens in Automatic Spray Guns

MUCH OF THE ATTENTION in the paint-using industry today centers on powder coatings, which continue to evolve and to require new spraying and handling technology. However liquid paint is still around 80 percent of the total paint production and usage in North America, and equipment for it continues to undergo development.

Automatic systems in particular are receiving constant attention, as suppliers work to meet the demands of precise, highly accurate production lines.

A recent introduction from Graco is the Pro Xpc. This is designed to be compact, lightweight and to work well with robots and fixtures with lower payloads. It also has 250 user settable presets and maintenance reminders that are controllable via a Programmable Logic Controller (PLC) or switch box. Both voltage and current can be independently adjusted.

DeVilbiss' AG361 automatic gun.

"With more customers looking to improve their processes, having more control at the PLC or Switch Box is key, said Wendy Hartley, product marketing manager, Industrial Products Division, at Graco Inc. "It gives them greater flexibility to spray a wide variety of part sizes and shapes and to take charge of what's happening on the paint line."

To improve the safety of the gun, the Pro Xpc Auto was designed with a 100 kV power supply and low voltage cable connection to the gun. The gun also has arc detection software that automatically shuts off the electrostatics when a part is too close to the gun.

"Safety is always a concern, but especially with electrostatics," Hartley added. "With only a 100 kV power supply and a more flexible and durable low voltage cable, we are able to reduce the risk of fire. But the bottom line is that the benefits of electrostatics outweigh the safety concerns – especially with this new gun design."

To prevent wrap back and increase transfer efficiency, the Pro Xpc has patent pending charge points. It also has multiple manifold options to accommodate a variety of fluid, air and power supply set-ups and is available in robot mount or fixed/reciprocator mount.

Another recent Graco product release is the ProBell rotary atomizer. This, Hartley said, offers high performance spraying with intuitive controls and a scalable design. It also provides flexibility with controllers, allowing customers to start small with one or install a complete system.

"The ProBell is a unique offering in the marketplace because it provides differ-

Graco's Pro Xpc gun in action.

ent options to meet the needs of end users," Hartley stated. "It is designed for both high performance and compatibility, it really is the best of both worlds."

The ProBell is offered in three different styles. The standard model offerings include the solid wrist robot and the reciprocator or fixed mount, while a hollow wrist robot model allows users to remove the applicator from the robot without touching hose connections, making it more convenient for maintenance.

The ProBell applicator delivers superior quality, high transfer efficiency and precision spraying with uniform atomization for the most demanding finishing applications. The specific approach of the ProBell rotary applicator makes it easy to develop a solution that fits the customer's installation.

DeVilbiss' HVLP series of automatic guns covers the range of standard commercial sizes. At the smaller end of the scale, the compact I HVLP features, the company says, a wide range of air caps, and a removable, stainless steel spray head for fast and easy maintenance.

Control of spray performance and fluid flow is managed through a fluid adjusting knob, and the units feature stainless steel passages. They have an independent fan, and atomizing and triggering air, which is essential for robotic and automatic spray machine applications.

At the larger end of the scale, the X HVLP spray gun is a sophisticated automatic gun that can be detached from its mounting block in a few seconds via the easy thumb release mechanism, offering fast and easy maintenance and serviceability. This special feature, the company asserts, dramatically reduces production downtime. No

SATA® automatic spray guns

SATA
German Engineering

Automatically – perfect finishes

Depending on their field of application, surfaces of industrially manufactured products have to comply with various functions and quality requirements. Thus, different coating and process challenges have to be solved by means of the application technology.

Besides hand-held application devices, SATA also offers perfect solutions for automatic coatings with automatic spray guns. SATA automatic spray guns feature a wide range of nozzle systems for various coating requirements and ensure a high process safety and best possible reproducibilty of the finish results.

For more information:
www.sata.com/automatic

SATA Canada Inc.
125 Buttermill Ave.
Vaughan, ON, L4K 3X5
Office: +1 905 660 1101
Toll free: +1 844 554 SATA (7282)
Fax: +1 905 760 1250
E-Mail: contact@sata.ca
www.sata.ca

"With more customers looking to improve their processes, having more control at the PLC or Switch Box is key," said Wendy Hartley, product marketing manager, Industrial Products Division, at Graco Inc."

tools required for detachment.

There is a recirculating and non-recirculating gun head that is an all-in-one unit, and fixed gun positioning. The guns also have a small footprint.

A larger option is the Automatic HVLP, which is designed for use with robots and automatic machines, and for stationary mounting. It gun is built to withstand the harsh conditions found in many automatic spray finishing applications.

There are only two moving parts, permitting greater reliability and easier maintenance. Patented PTFE needle packings are spring-loaded for extended service.

Abrasive fluid packing is available as an option for more abrasive coatings, and there is a detachable spray head for fast needle packing replacement. Circulating capability is standard, and there is optional remote fan control.

SAMES KREMLIN's ASI 24 airless automatic spray guns are designed for harsh coatings and abrasive materials. They feature a completely stainless steel fluid passage, and a high cycling rate.

The new version of the company's automatic Airmix ATX spraying gun ensures, it states, a high -level performance with an excellent finish quality of pulverization due to the use of proprietary Airmix technology.

These ATX units are recommended for applying UV products. They feature a high transfer efficiency of up to 86 percent.

The company makes the same claims of 86 percent efficiency for its AXC automatic Airmix spray gun. Itis claimed to offer excellent atomization quality and high-quality finishes, and offers a modular design.

A key offering from Nordson in this area is the model A7A automatic airless spray gun. This is for high-production airless painting, sealant and adhesive applications.

Nordson airless systems, the company says, produce fine atomization and a soft, controllable spray to deliver excellent finish quality with minimal overspray. Air-actuated A7A guns provide a fast response time of 30 to 40 milliseconds, and high-speed cycling capability of up to 2500 cycles per minute. They are recommended for coating situations requiring precise material application.

The fast cycling with positive cutoff provides precise operation with minimal dripping and spitting, and a rugged construction minimizes downtime and maintenance costs. The A7A guns are available in single-, dual-chamber, and dual-chamber angled models, and can be used in either non-circulating or circulating heated airless applications.

They are produced in aluminum, steel, and stainless-steel models. They use the Nordson Cross-Cut and dome nozzles for effective atomization of hard-to-atomize coatings, for minimal paint waste. The guns mount to a half-inch round bar for fast, easy installation.

Nordson's similar modular Quattro automatic spray gun provides fast color and coating changes in high-production airless painting applications. Fast cycling with a positive cutoff provides, the company says, precise operation with minimal dripping and spitting, while the modular design facilitates spray gun removal for fast cleaning and repair with minimal downtime.

Stainless steel construction is ideal for waterbornes and highly corrosive materials, and a PTFE coated packing cartridge resists material build-up on the shaft and spring.

The Company's

Trilogy AAA (air-assisted airless) automatic spray gun is a compact, lightweight gun that can be used in a variety of liquid spray applications. The gun incorporates a variety of per-

SAMES KREMLIN's ASI 24 gun.

formance features, including separate air regulators for round or flat jet spray patterns, offering more application versatility. Its modest size and weight commend it for fixed, robotic and reciprocating applications. It has a stainless steel packing cartridge, and the needle seal is accessible from outside.
There is separate round and flat jet regulation, for a better level of adjustment versatility, and the gun is available in both imperial and metric versions.

Anest-Iwata's HVLP range of guns includes the compact LPA100 gun for automated painting equipment, reciprocators or robotic painting. This unit offers multiple mounting and spraying options.
The LPA 200 is a full-sized model with the same capabilities. Both models feature stainless steel fluid passages, and will work equally well with waterborne and solvent-based coatings.

SATA's Satajet 3000-A HVLP gun is uses a high air volume to get high-quality atomization. The slight additional cost for compressed air, the company says, compared to a conventional high pressure gun, is considerably exceeded by the material savings.

The patented air circulation principle provides a homogeneous, soft fan. This wide fan, high material flow rates and low weight all result in high outputs.

The durable air caps are made of brass, not of aluminum, to ensure a long life. The SATA Quick Change System allows for a rapid air cap change with just one-and-a-half turns.

The paint needle and nozzle are made of stainless steel, and the gun body features thorough anodizing. There are self-adjusting air and material packings.

Choosing the right gun for an automatic application needs careful thought. But if there is one sure thing, it is that the selection today is wider than ever. ■

E-coat Maintains its Niche

THE E-COAT PROCESS is one of those niche technologies that continues to develop and attract new business. Usually called electrodeposition when written in full or sometimes the electrophoretic painting process, it provides coatings with a particular combination of properties that are welcomed for certain demanding applications.

The standard E-coat process involves immersing a metal part in a water-based solution containing a paint emulsion. An electrical charge is applied to the part that causing the paint emulsion to condense onto it.

A part can be painted wherever the liquid reaches a metal surface, including on inner surfaces. These interiors part can be coated since the exterior is fully insulated by the coating. This applies with both primer and topcoat E-coats.

The coating thickness is limited by the applied voltage. As areas of high voltage build a coating, they become insulators and so cause lower voltage areas to build up.

A rinse tank removes the residual emulsion from the part and recycles it back to the paint tank by ultrafiltration. The E-coat is cured by heat, the curing time and temperature being determined by the chemistry of the coating.

Valspar offers Vectroguard as its entry into this field. Vectroguard coatings are used in a range of commercial applications, including construction, agriculture and transportation,

A MetoKote system in one of the company's regional centers.

including cabs and wheels.

These cathodic electrocoat solutions, the company says, deliver excellent corrosion protection along with key operational benefits. They are commercially available in a range of traditional primer colors.

The claimed benefits include superior edge-corrosion protection, along with a range of primer technologies to meet specific needs. Vectroguard is also stated to offer three to four times the abrasion resistance of standard single-coat products.

It also provides good resistance to a range of chemicals including household detergents, pesticides and motor oil, and can be applied over a range of pre-treatments that meet operational needs. A further feature is a wide operating window, which allows for a strong first pass yield, and provides higher film builds, to protect equipment. The formulations are also lead and chrome free, providing a finish with low environmental impact.

The Clearclad process, from Clearclad Coatings, has been developed since the early 1990s. It was originally developed for applying an anticorrosive coating over steel car bodies, and subsequently extended to other markets, including such consumer goods as hardware, jewelry, eyeglass frames, giftware and other items.

Material utilization, the company states, is close to 100 percent. This high production efficiency, Clearclad states, coupled with advanced quality, results in lower unit costs.

The coating materials can include resins, pigments and additives that are dispersed in water and held in a bath. The parts to be coated are immersed in this solution and an electrical current is passed through the bath using the parts as electrodes.

Electrical activity around the surface of the parts makes the

resin directly in contact become insoluble in water. This causes a layer of resin – including any pigments and additives present – to adhere to the surface of the parts. The coated parts can then be removed from the bath and the coating is normally cured by baking in an oven to make it hard and durable.

A predictable and consistent thickness of coating can be applied through adjustment of the current in the bath. This, the company says, is essential if tinted coatings are required, such as brass or gold colors applied over bright nickel or zamak alloys.

There is no need to dry parts after water-based cleaning or pretreatment processes with Clearclad. Also, through use of ultrafiltration technology, rinse water can be extracted from the bath and used to recycle nearly all of the drag-out back into the bath.

On the machinery side, the Therma-Tron-X Econ-E-Coat system offers high density throughput and has similar features to the company's Sliderail Square Transfer system, but in a smaller work envelope. Specifically designed to be portable, this modular unit, the company says, relocates easily. The Econ-E-Coat system provides the same high quality and durability as the SST, with many having accumulated more than 100,000 hours of operation.

Coating capacity of the system is between 50 and 150 sq ft per load, or up to 3,000 sq ft per hour. It employs either a multi-stage phosphate or a conversion coating pretreatment system.

Immersion anodic or cathodic E-coat paint application is done using ultra-filtration, temperature control and a rectifier. There is a three-stage recirculated immersion post rinse, as well as

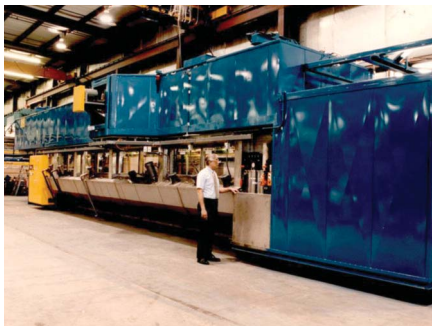
glass-enclosed pretreatment.

A bottom entry/exit dehydration/cure oven is mounted above the tank section, and units include a forced-air cooling tunnel. There is an integrated utility area for a hydraulic unit, and a PLC controller with a color HMI touchscreen.

Options on the Econ-E-Coat include a batch or continuous-flow wastewater treatment system; a reverse osmosis water generation unit, and an automatic chemical feed for the pretreatment section. A process data management system is also available.

MetoKote, another E-coat equipment supplier, designs its systems according to whether the E-coat is a primer or a topcoat. The company favors cathodic epoxy E-coats for primers, both paint and powder, because of their superior adhesion and corrosion protection properties.

Since this technology has good appearance properties, it can also be a single coat where resistance to UV from



A Thermo-Tron-X Econ-E-Coat system.

sunlight is not needed. These materials are used on piece parts where a cure temperature above 380 deg F is possible.

Anodic epoxy electrocoat materials, MetoKote says, are used in the same way as the cathodic epoxy E-coats. Adhesion and corrosion resistance properties are generally better than commonly used liquid paint primer materials, so they are used where components must be coated as assemblies that contain heat sensitive parts such as bearings and seals. The part temperature for curing can be as low as 180 deg F.

For topcoats, MetoKote sees cathodic acrylic electrocoat materials lending themselves well to topcoat applications because of their high resistance to UV rays in sunlight. A key advantage is that only one coat is necessary to achieve such resistance.

The overall adhesion and corrosion resistance properties of such a coating are good when compared to popular liquid primer plus topcoat paint systems. Electrocoat technologies, MetoKote points out, are generally restricted to a given color, and in some applications additional color options are required.

A solution here is to use a cathodic acrylic as a one-coat system for the primary product color. It can also be used as a primer to be topcoated with a liquid or powder topcoat material for multiple color options.

Engineered Finishing Systems offers E-coat systems has enhanced its tank circulation systems, to ensure uniform consistency. The company claims its closed-loop post rinses offer more than 99 percent paint utilization efficiencies. As do other suppliers, it has both anodic and cathodic E-coat systems.

Continuous conveyor line speeds in its equipment range from three to more than 60 fpm. For very large or unusually shaped parts, it offers programmable hoist and other square transfer type systems.

The enclosed E-coat tanks ensure containment of any objectionable paint vapors that may be emitted from the paint surface. There are also part grounding systems that will operate, the company says, trouble-free for years.

There are also corrosion-resistant piping and protective tank linings. Stainless steel pumps, heat exchangers, post rinse tanks and spray housings are available also.

E-coating is not a complex process, but like anything else in the finishing industry, it needs to be implemented with care and forethought. Today's suppliers of equipment and coating formulations are well situated to help with this, and to ensure any systems are fully compliant with emissions rules as well as production standards. ■

Options in Spray Booths and Filtration

THERE IS ALWAYS a tendency to see a spray booth as a spray booth – and nothing more. Often, it is only when floor managers and operators become involved that specifications are planned carefully enough that the booth is properly designed for the volume and size of parts to be painted.

All booth designs require shrouds or rigid partitions, along with a means of moving air through so as to eliminate build-up. And on the other side of the painting operation, it is about filtration of the air to ensure a clean operation.

"A booth is all about filtration and air movement," observes Lizabeth Bjarnason, who manages marketing for Therma-Tron-X Inc. "Anyone can make a booth, but those two things are what make a good one."

TTX sells both dry filter booths and water-wash booths. Liquid paint, of course, is still 80 percent of all paint sold anywhere, and most booths need to be designed for this.

Many, perhaps most, booths are intended for use with high-volume batches of parts, and they need good flow-through. Monorails are still a popular option for achieving this, but TTX has heavily promoted its Square Transfer Indexing Systems (SSTs) as an alternative. These can be good for loads up to 20 racks per hour.

Monorail systems transport parts in a continuous line along a chain conveyor. A chain conveyor could be an overhead power conveyor, as well as power and free conveyors in both overhead and floor mounted configurations.

In square transfer systems, each load travels through the finishing operation on a step-by-step basis. A load is lowered vertically into each process tank, held there for a prescribed period of time, then raised vertically from the tank, shuttled a set distance to the next station, and lowered into the next process tank.

Programmed hoists are one type of square transfer system in which loads are individually transferred from one process to the next by one or more hoist mechanisms. Indexing square transfer systems, on the other hand, will move all

An Annadale Finishing Systems spray booth.

A TTX SST conveying system.

loads simultaneously. This offers the advantage of having all process tanks full at all times, and minimizes material handling time for maximum throughput.

Indexing square transfer systems, TTX says, have various advantages over monorail systems, perhaps most important being reduced floor space requirements. Square transfer systems permit immersion pretreatment and coating in a fraction of the space required for monorail systems due to their ability to vertically immerse product into tanks only marginally larger than the maximum work envelope.

The use of the square transfer arrangement in the cure oven minimizes oven volume, resulting in capital and operating costs savings. In addition, the oven is typically positioned directly above the process tanks, further optimizing the system footprint.

For powder and liquid spray coating systems, the indexing square transfer material handling concept can still serve an important role by providing economical immersion pretreatment and dry-off prior to the painting operation. This is particularly true for pretreatment processes in which immersion is the preferred application method, such as cleaning, phosphating and pickling.

Filtration is, obviously, key in ensuring a spray booth is efficient in its job. There are various air filtration technologies on the market.

Pacific Spray Booths offers its Bananza B series of direct-fired, make-up air systems. These provide ventilation, and heating with optional curing for automotive, RV, truck, boat and aircraft spray booths. Additionally, they work in booths for industrial components and parts, cabinets and woodwork, or furniture finishing.

They are available in capacities from 4,000 cfm to 60,000 cfm, and in a range of configurations. They can be used for new or retrofit applications, and the company claims a high level of thermal efficiency for them.

The spray booth heaters introduce a controlled amount of fresh, clean, tempered air into the finishing area, potentially reducing cycle times, and improving productivity and finishing quality. They feature heavy-duty, corrosion-resistant, galvanized steel construction, and have large access panels to ease maintenance of the blower, motor, drives and burners.

They can be mounted indoors, beside or above the booth, or outdoors, on a roof or beside the plant. The company states they can be used with any configuration of spray booth.

Pacific Spray Booth also offers Rammstein air heaters for use in spray booths. These are variable air flow rate heaters that match the air flow rate requirement of each process inside the spray booth.

"The traditional constant air flow rate heaters poorly approximate the air flow requirements of finishing processes," the company states. "This results in a lot of wasted energy. The Rammstein air heater, however, produces significantly reduced operating costs."

Global Finishing Solutions offers what it calls its most affordable automotive paint booth. The Performer ES is a solution for small to medium-sized shops looking for an all-in-one paint environment.

The Performer ES is also recommended for industrial shops and businesses painting small equipment or parts. The booth comes complete with light fixtures and bulbs, filters, air solenoid valves and door limit switches for code compliance.

A heated booth model also includes intake and exhaust ductwork. All GFS booths are ETL listed, and available upgrade options include white pre-coated panels, heaters and advanced control packages.

Another supplier with a range of booth styles is Annadale Finishing Systems. It offers both custom-designed and packaged spray booths, available in down-draft, cross-draft and semi-down-draft formats, for automotive and truck, enclosed or conveyorized and bench dry filter spray work. The company states it offers effective air flow volume and pressure to remove airborne particulates and provide optimum paint transfer efficiency. It also produces high production water wash spray booths, with centrifuge sludge removal systems, offering efficiency and low maintenance. Batch style booths are available with spray and cure options. For more elaborate installations, it also offers fire suppression systems, spray booth filters, booth coatings. ■

Powder Coating 2017 Technical Conference

The 2017 Powder Coating Technical Conference was held in late March at the JW Marriott Hotel in Indianapolis. Hundreds of visitors from powder coating companies, both coaters and suppliers, converged on the city for three days of seminars on new materials and new processes.
The event also featured a tabletop show presenting some of these new technologies, where attendees had a chance to discuss their own needs and plans with the supplier community, as well as social events. If you were there, see if you can spot yourself in the photos on these pages.

Colin Hammacott, Hedson Technologies.

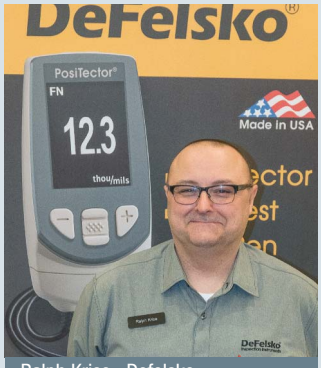

Charles Dube, Pourdratec, Saint-Germain-de Grantham QC.

Judson Delancey, Tom Slezak, Kirk Beaster, Suresh Patel and Liz Teska, Chemetall Inc.

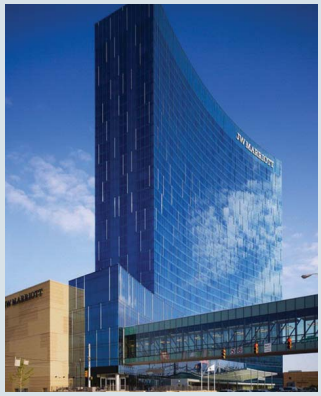
Pete Schmidt, Jim Freers, and Steve Phillips, Bex Nozzles.

Evan Williams and Tim Stetchschulte, Eisenmann Corporation.

Mark Freels and Mike Cook, Global Finishing Solutions.



Ralph Krise, Defelsko.



Chris Merritt and Joe Mallee, Gema

Micky Ricard and Ami Anzures, SAMES KREMLIN.

Rich Huston and Gordon Johnson,
TTX Therma-Tron-X.

Tony Varda and Guido Konijnendijk,
IGP Powder Coatings.

Lee Lechner and Brooke Roahrig, Echo Supply.

Eric Fritz, John Qwed, Dan Liedorf and Judy Lietzke, Carlisle Fluid Technologies.

Getting the Right Mix

THE RECIPE WILL NOT WORK if it isn't blended properly. This is a truism, but achieving a perfectly consistent blend and particle size is a critical part of getting a coating right, so it will pass the customer's own inspection.

Netzsch has found its large, specialized homogenization equipment has been accepted well in the industry. However, Kevin Kirkwood, marketing coordinator with the company, says it is also seeing a demand now for smaller systems.

"We are seeing an increase in the need for smaller, specialized equipment," he says. "For this reason, we designed products for high throughput lab-sized operations. We've been very successful in promoting this."

The company's larger systems have made their main impact in wet mixing. Customers' primary technical demand, Kirkwood says, has been about increasing throughput while operating their homogenizers in circulation mode.

Features of the large homogenizer models include stepless RPM-control of the agitator and the homogenizer, which provide a highly efficient agitating and homogenizing system in all RPM ranges. These also offer patented scraping for clockwise and counterclockwise direction.

There is also a patented method for homogenizing smallest amounts of material in the vessel, as well as a proprietary method for moving and dispersing powders. The systems offer intensive homogenizing in the vessel as well in the recirculation.

One relatively recent introduction from Netzsch is its S-Jet milling system. This offers the advantages of dry-grinding with superheated steam. Through use of an air classifier integrated in the mill, the company says, particle sizes down into the submicron range are possible.

There are reportedly significant benefits to be gained by using superheated steam as a grinding medium instead of air. The jet energy, which is considerably higher than that of air (jet speeds of up to 1200 meters per second can be achieved), increases the discrete energy input and the kinetic impact energy of the product particles is reportedly increased fourfold.

Marcel Häfliger, general manager of Bühler Mahwah/USA, says the primary technical demand his company is seeing is for use of smaller grinding media, which offer more efficiency.

"They are also looking for a sophisticated control solution, and better premixing/pre-grinding equipment to better deal with lower raw material quality," he says.

He states that Bühler's great strength lies in its ability to provide customers with complete solutions, from material handling and storage, to mixing and pre-dispersing/pre-grinding, over to grinding and finishing.

A Netzsch S-Jet unit

"We see a demand for Getting the Right Mix smaller, specialized equipment and for larger batch systems," he says. "Customers seek small batch handling for specialized applications, and more demand for highly efficient large batch solutions, replacing old, inefficient technology with more sophisticated and automated solutions."

A recent product introduction from Bühler is a new grinding option that unites its MacroMedia pre-dispersing unit and the MicroMedia bead mill. The combination of the two, the company says, greatly changes the wet grinding process.

Thanks to the improved process control of the MacroMedia in the pre-grinding stage, fluctuating raw-material qualities can be balanced out, thereby achieving uniform properties for intermediate products. This allows an optimization of the fine grinding process with the MicroMedia bead mill.

Norbert Kern, head of product management for Grinding and Dispersion Technologies at Bühler, notes that agitated bead mills with small grinding beads have long become the standard in demanding technical applications. But quality expectations for simpler dispersion tasks, such as producing printing inks or coatings, have also risen significantly in the past few years.

This is leading manufacturers of packaging printing inks, for example, to want the efficiency benefits of small grinding beads. Besides the reduced energy consumption and increased productivity, the quality aspect is decisive for them: The finer pigment grinding requires less pigment and helps them increase their margin.

An optimal pre-dispersion is crucial for the advantages of the agitated bead mill with micro-grinding beads to unfold. In

practice, there is usually only a mixing process before the actual wet grinding which is very dependent on the quality of the raw materials. If the mixing is not absolutely homogeneous, problems may occur in the grinding.

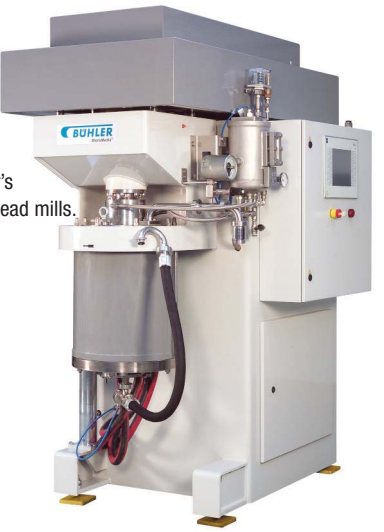
Uneven particle size distribution can lead to clogged mills or that larger grinding beads must be used. Another disadvantage is that sedimentation can occur throughout the whole plant system. This then results in frequent cleaning intervals and thus production interruptions.

Bühler, Kern says, has taken this as an opportunity to develop a new kind of solution for the pre-dispersion and to optimize the wet grinding process as a whole. After meticulous evaluation of various system types, a solution with grinding beads was chosen. A bead mill is best suited for creating efficient grinding of the particles in the pre-dispersion process.

A central requirement for the new solution was a high recirculation rate. To efficiently eliminate oversized particles and to achieve the best particle size distribution possible, the entire contents of the mixing tank must pass through the bead package multiple times.

The new Paintlab + Viscomixer from Paul N. Gardner Co.

One of Bühler's MicroMedia bead mills.



The result, Kern says, is the MacroMedia: a compact pre-dispersion unit that combines all essential components, such as pumps, material conveyance and dispersion zone, into a single shaft that can be integrated into existing environments without a problem. Special emphasis has been placed on a high level of process safety and easy cleaning.

The machine has a dynamic, self-cleaning multiple gap separator. No particles can clog the separation gaps because of the shear forces between the rotating and static parts in the

dispersion zone. The high flow capability enables high recirculation rates and a high number of turnovers. Radia Products, formerly known as Red Devil Equipment Co., last year updated its Speed Demon I one-gallon mixer to its product line-up. Bob Brockman, director of sales, says a key feature is a different timer.

"It used to be set at two minutes and three minutes," he says. "We have found we could get full color incorporation within 90 seconds, so we have switched the timer on the Speed Demon I."

The improved unit debuted in 2016 at the American Coatings Show in Indianapolis.

CB Mills has long offered a range of grinding mills. Its KD series is a standard operating media grinding mill, with a horizontal chamber for dispersion and fine wet grinding. The models in this series are designed for difficult to grind products, and are able to de-agglomerate as well as reduce particle size.

The ECM-AP series, the company says, is considered to be its high-energy horizontal mill. Its proprietary media separation design allows operation with media as small as 0.1mm, while increasing efficiency by as much as 35 percent over previous designs.

And for small-scale operations, ECO 5 is designed as an economical, five-liter horizontal mill. This can be used for laboratory work, or small batch production.

And for checking that a mix has been done properly, Paul N. Gardner Co. has a new unit, the Paintlab+ Viscometer, which can measure viscosity at each stage of producing a coating. Three models are available, each offering a different measuring range according to the viscosity of the test sample.

A sample from a production batch, the company says, can be quickly and easily measured in a 250-ml tin and the required thinning ratio determined for scaling into the production process. The instrument operates at a fixed speed of 562 rpm to directly measure the viscosity in Poise (P).

A high stability motor speed control ensures accuracy and repeatability during each test, and

an integrated temperature probe accurately measures and records sample temperature for each test. Lab-tough glass allows easy removal and cleaning of unintentional splashes and smears from the capacitive sense buttons and screen, and the viscomixer can be configured to use multiple ranges by purchasing additional rotor kits. ■

Real Challenges for Canadian Coatings Manufacturers

By Gary Leroux, President, CPCA

CONSOLIDATION HAS BEEN a fact of life in the coatings industry for the past 20 years and it continues unabated with several major acquisitions currently in play. These moves change the complexion of the supply and demand curves in terms of raw material supply and related pricing. This filters down the supply chain—right to the customer at the point of sale for both industrial and retail.

Like it or not, this is now expected and companies of all sizes have had to roll with the punches. Some have been knocked out or severely wounded, while others have thrived. The large multinational companies cannot be faulted, as they must do what they can to compete in an increasingly globalized economy and drive shareholder value. The invisible economic hand coined by Adam Smith in The Wealth of Nations conducts the proceedings with all working in their own interests as dictated by free market forces.

In terms of the current status of the coatings industry in Canada, CPCA is now conducting a comprehensive economic impact study of this national industry in concert with Orr & Boss. It is the first of its kind in Canada. This study will confirm some of the trends CPCA has been tracking for our members and how those trends might shape the future of the industry going forward.

Since the introduction of NAFTA—the one that will soon be "tweaked"—the good news is the volume of paint and coatings on the market has steadily increased in a slow but stable fashion. This has occurred despite or because of consolidation depending on one's perspective. In 2008, the volume of paint and coatings imported from the United States was roughly 40 percent. Over the past 10 years that number has grown to 59 percent. At the same time manufacturing facilities were closed in Canada with that capacity absorbed by companies' facilities in bordering states.

Some would argue that in those situations proximity spurred on this situation given that shipping time to Canada from the United States is relatively short and cost-effective, otherwise the trend would have subsided. The answer to the question as to why such a significant shift in production occurred is not immediately obvious, but there are many clues.

Fingers often point to increasing regulations as a big reason for the shift in production given that regulations are generally not as severe south of the border. And, regardless of one's view of the political situation, regulatory impediments to business will likely lessen in the months and years ahead under the new Administration.

In Canada, however, the coatings industry continues to be among the most heavily regulated sectors at all levels of government and this has not diminished. In fact, one could easily argue that it has ramped up in recent years with the Chemicals Management Plan at the federal level assessing all chemicals in commerce for the past 10 years and another five years to come, and very likely more on the horizon as already indicated by government. In that 10-year timeframe 2,300 substances were vigorously assessed by government, with more than 80 risk management measures taken including regulations, to address health and environmental concerns. Even with the recent reform of the Toxic Substances

Control Act (TSCA) in the United States under the previous administration, the number of chemicals on the radar for assessment is around 10—a paltry sum by comparison. That does not mean there aren't challenges in the US by any means, but they are different challenges related to the separation of powers at the federal level of government and among state governments as well.

Ongoing regulations for health and safety are regularly updated or amended here in Canada. These include current amendments to the Canadian Hazardous Products Regulations, the Transportation of Dangerous Goods Regulations and the current thrust at the federal level to amend the Canadian Environmental Protection Act as it relates to chemicals management, to name a few. All have impacts on business. All usually mean added time pressures and costs for business in Canada. Provincially, there are challenges that drive costs and these too are generally related to health, safety and the environment.

Industry does not deny the need for adequate protections related to these three most important areas of business, but often the regulatory red tape has little or no positive impact on worker or consumer safety. The growing level of bureaucracy takes on a life of its own, requiring business to clear regulatory hurdles for licensing and permitting processes and a host of other measures that must be complied with to sustain and grow their business. More often than not this slows down business, which in turn slows down job creation, which in turn reduces the level of both corporate and personal taxation. It is a negative spiral that often serves no one's interests but the regulatory body involved.

In recent years we have seen this in spades in Ontario where public policy, which some would argue has been bad public policy, has driven up the cost of doing business. These include increasing hydro costs, carbon pricing costs, stewardship fees for consumers and other environmental fees related to plant operations and waste handling. All has served to increase corporate taxes leading to more than 300,000 jobs disappearing in the last decade. Is it any wonder the Ontario Government has now embarked on a Red Tape Reduction Challenge for six sectors, including the chemical sector, to help put the out-of-control regulatory genie back in the bottle.

Industry will do what it can to ensure this is not another consultation exercise for the sake of consultation with no discernible reduction in regulation. Sadly, all too often this is the case with consultation. There is, in fact, a Red Tape Reduction Act in place at the federal level and one would hardly know it exists despite the fact that it is intended to remove a regulation when a new one is introduced as well as reduce administrative burden, especially in cases where it impacts small business.

Generally, industry understands the ways in which these issues negatively impact business. There are countless examples of frustration encountered by companies having to endure regulatory oversight when doing business in 2017. These challenges go above and beyond the norm and prevent many from meeting business targets. The profit and loss statement is ruthless in that regard.

Then there is the question of subsidies and tax incentives, which has been a very sensitive matter of late as it often skews the playing field. But such incentives are rare in Canada except for some big businesses in the manufacturing sector, as seen in the recent case of Bombardier. Those expenditures are almost non-existent for small- and medium-sized (SME) enterprises, which happen to represent more than 90 percent of all the jobs in Canada.

It is instructive to consider the issues noted above in light of a current situation where a good-sized Canadian SME with 125 employees and annual growth in the 20 percent range in recent years, sells product in Canada, the United States, Europe, and China. The company experienced the full wrath of the regulatory beast when considering an investment in plant and facilities to support and sustain its impressive growth. The $4-million budgeted for expansion was immediately shelved as it became clear it would take up to one year for the necessary approvals to expand its physical plant.

This decision was further exacerbated by the fact that three US states are dangling incentives that are very hard to ignore such as tax incentives, financial incentives per job created and "free" land to build new facilities. Of course, it would only be a matter of months, not years, to be up and running. Time is money after all.

The founders and current operators of the company want to remain in Canada and are very proud of the excellent staff who have been responsible for this tremendous growth, but must now prepare for the reality of a globalized economy and the competition it brings. Even with such competition and higher costs of production, they are still willing to invest and grow their business here in Canada, but now that may be at risk. Fortunately, the government is now reconsidering what it might do to help facilitate the expansion in light of the real life circumstances created by these regulations.

Let's hope the story has a happy ending. If not, the current operation may get much smaller as the U.S. operation, if it proceeds that way, will surely grow in leaps and bounds. Add to that the prospect of lowering corporate and personal taxes in the United States, and introducing less regulation and a potentially thickening border with a border tax, it may be too late to expect expansion of the business in Canada.

That is but one story, in one industry, but how many more have there been or are developing right now? ■

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

Future is Bright for Pigments

A KEY FACTOR in development of new pigments today is precise tailoring. While there are still some new chemistries emerging, the real market driver is in being able to deliver a known pigment, but with the right color, milled to the right particle size, and with the right additional properties added.

Using pigments has always been as much about formulating as it is about the intrinsic optical and chemical properties of the pigments themselves. Most coatings processes are heavily dependent on recipes and proprietary formulations, but when color enters the picture, then the finest of details become important. Customers generally have to trust that physical properties of a coating will be as claimed, but color accuracy can be checked with the eye.

Landa pigments (right) disperse more easily in water than conventional types (left).

Additionally, pigments have been implicated in some environmental and emissions problems. Addressing these is something that pigments suppliers feel the need to address.

"From a technological perspective," says Dr. Thomas Metz, head of the global competence center – coatings, with Clariant, "there is a clear trend towards sustainable, ecological and energy saving coating systems, which increases the demand for colorants and pigments to support this trend. For Clariant, sustainability is an integral part of our corporate strategy for the future.

"We strongly believe that sustainable products with an improved carbon-footprint like our bio-based quinacridones or products which generate significant energy savings in paint production like our Easily Dispersible (ED) pigments being part of our EcoTain label as alternatives compared to the standard products will be the preferred product option in future."

As far as new pigments that the company sees as promising, Metz says Clariant's Hostatint A 100-ST range offers strong market potential.

"From cellphones to bikes and cars, metallic and mineral effect shades are becoming increasingly important for industrial applications," he says. "There's also growing interest in using high transparency to enhance glass or wood surface properties.

"As a full range of pigment preparations, new Hostatint A 100-ST enables the fast and flexible formulation of a wide range of color shades for transparent applications. In addition, they are providing a cost-efficient way for manufacturers to address new coating trends in the market segments."

UV curing, he notes, is very important in today's trend towards reducing solvent emissions. The curing of colored coatings without any major restrictions will be a key success factor.

"Clariant's new Hostatint UV range offers an easy solution to meet the growing trend for colored UV systems," he notes "The full color spectrum is covered with high performance, ready-to-use pigment preparations that add further value to the increased productivity, lower costs and surface performance improvements of UV cured wood coatings."

He cites quinacridone pigments based on renewable raw materials as part of Clariant's commitment to sustainability and to future generations. The company's 'Pink going Green' push uses renewable raw materials to create bio-based, high-performance quinacridone pigments for automotive, industrial and decorative coatings applications.

Hostaperm Pink E (Pigment Red 122), one of Clariant's a polycyclic pigment based on renewable bio-succinic acid, represents the company's switch to renewable raw material without changes in the product quality or the guaranteed specification. In addition to bio-based quinacridone pigments, and its Easily Dispersible pigments, it is focusing on sustainable pigment preparation ranges such as its Colanyl 500 and Hostatint 500.

"We are seeing trends toward highly durable, sustainable and cost-effective coatings solutions." he says of discernible future trends. "Additionally, we see more requests for coatings to offer additional functionality like heat management or

scratch resistance, which are properties far beyond the pure protective and esthetic function of a coating. Our R&D work is focused on cost-effective and innovative products that fit current coatings trends.

"Our Easily Dispersible pigment product line, bio-based quinacridone pigments, and pigment dispersions for UV coatings (Hostatint UV) or super-transparent, high-end industrial coatings (Hostatint A 100-ST) underline our efforts toward economic and sustainable solutions. We are constantly working on techniques to improve the performance properties of pigments to increase the range of application possibilities for our existing product portfolio."

Shepherd Color Co. now has approval for some commercial uses of its YinMn Blue pigment, which was discovered serendipitously in 2009 by Dr. Mas Subramanian, a researcher at Oregon State University. The name comes from the main chemical ingredients: yttrium, indium and manganese.

Its first uses are in artists' colors, but there are strong possibilities for use in architectural coatings that require high solar reflectance for regulatory approvals and for reducing energy used in cooling. Other applications include those where its high heat and UV stability, IR reflecting properties, unique chemical structure and composition along with its bright blue color, can add value.

A key advantage is that it has so far displayed no significant toxicity, nor the carcinogenic properties that bedevil some other mineral blue pigments. Testing has found that the unique crystal structure of the compound keeps the color from fading, even when exposed to oil or water.

LANXESS, which is represented in Canada by L. V. Lomas, says consistency of supply is one issue for customers today. Dr. Hans-Peter Baldus, vice-president and head of IPG (inorganic pigments group), Americas, says the company's iron oxides business shows this.

"The market for synthetic iron oxide is expected to grow at approximately three percent a year until 2025," he says, "while consolidation of the pigments industry continues. Although China is by far the largest producer of synthetic iron oxides, with over 50 percent of total global supply, the number of production locations for synthetic iron oxide pigments has been decreasing steadily for several years.

"This is a result of the consistent implementation of environmental regulations by both pigment manufacturers and the pigment processing industry. The number of production locations has dropped by half since 2008, resulting in a reduction in supply, particularly in the

Some of LANXESS' Bayferrox pigments are now made with the Ningbo process.

segment for red pigments."

According to LANXESS, this consolidation process is likely to continue. Baldus says the company is responding with targeted investments in sustainable technologies, such as its newly developed Ningbo Process, which it enables it to expand our leading position as a reliable supplier to our customers.

The Ningbo plant is designed for an initial annual capacity of 25,000 metric tons. LANXESS is also ramping up capacities by 23,000 metric tons per year at its longest existing site in Krefeld-Uerdingen, Germany, where for more than 90 years the company has been producing yellow, red and black iron oxide pigments. Investments at the site in Porto Feliz, Brazil will add another 2,000 metric tons per year of yellow iron oxide pigments to the global production output.

"In our daily business we are facing frequent customer requests for support in terms of testing and consulting services," Baldus adds. "The specialists of our Global Competence Center in Burgettstown, PA, regularly investigate customer queries under realistic conditions in our laboratories. Information on optimal pigment selection and processing in the various application systems are being requested most frequently." The patented Ningbo Process recycles all emitted gases, including nitrous oxide. Its using a multistage wastewater treatment process means more than 80 percent of the wastewater is recycled back into the process.

In addition to highly sustainable production, the process management develops pigments covering new color spaces that surpass all previously available iron oxide red pigments in the market. These 'New Red' pigments, Baldus says, will be marketed in the future under the Bayferrox brand and are characterized by their impressive ecological benefits and technical features in areas dispersibility, VOC emissions and viscosity.

Another supplier with a new pearlescent pigment release is the Eckart Group, which is a part of Altana AG. The first pigment in its Edelstein ('noble stone') line is called Edelstein Ruby Red, and is based on premium layered silicate. The pigment has, the company says, high color intensity and saturation, and exceptional durability.

Eckart also recently released new METALURE Quantum PVD pigments. These, it says, exhibit much stronger gloss than comparable products, and reduce sieve residue, optimize particle distribution, and improve adhesion properties.

Applications range from consumer electronics, car interiors and wheel rims to decorative purposes. These pigments are aimed at applications where a glossy chrome effect is desired.

For water-based systems, Eckart also offers its Hydroshine products, which similarly offer high-brilliance chrome effects. They are based on PVD aluminum pigments, enclosed in a transparent capsule of silicon dioxide. This makes them particularly stable, without using any heavy metals.

Offering also high resistance to chemical influences, gases, and hydrolysis, the pigments reportedly have excellent intercoat adhesion. They are also highly shear-resistant.

BASF has made a new move in the pigments market with a strategic long-term partnership with Land Labs. Under this exclusive agreement, BASF will employ Landa's nano-pigment technology in a new portfolio of easy dispersible, ultra-high transparency pigments marketed under its Colors & Effects brand.

"We are very excited to partner with Landa in this cutting-edge venture," said Alexander Haunschild, senior vice-president, pigments, BASF. "We see the remarkable impact that Benny Landa and his company are having in the printing industry and are proud to bring this amazing technology to our customers in the automotive coatings market. This long-term collaboration demonstrates our commitment to differentiate our customers' business by bringing new technology to demanding markets."

The Landa nano-pigment technology – originally developed for the printing industry – is based on smaller size and narrower particle distribution. The implementation of nanotechnology leads to a thinner, higher chroma coating while simplifying its production.

"We are proud to establish this global partnership with BASF and its Colors & Effects team," added Benny Landa, chairman of the Landa Group. "By combining our technologies and expertise, we can provide fantastic new products to the automotive coatings market. This synergistic alliance has the potential to disrupt the market."

Benny Landa founded the Landa group in the early 2000s. It has developed a digital technology called Nanography for the commercial, packaging, and publishing markets. Nanotechnology is the science of manipulating matter at the atomic or molecular level – between one and 100 nanometers – to create materials with unique properties. Using this technology permits creation of a new product range for automotive coatings.

Whether it, or any of the other innovations mentioned above, does disrupt the market, only time will show. But clearly, there are still developments in pigments technology that are yet to be fully exploited, and that can significantly change what paint and coatings suppliers will be offering their customers in the years to come. ■

Widening the Reach of Waterborne Resins

THE PHYSICS OF waterborne resins is something still in development. Resin suppliers have made immense strides in recent years, but there are still materials that don't want to go into the water, and prefer solvents. Or, they dissolve well with the right treatment, but they can be hard to process satisfactorily unless procedures are followed exactly.

The search for good waterborne materials is critical, of course, since both consumer and environmental pressures are pushing the industry towards more waterbornes. Finding ways to dissolve and distribute resins in aqueous solutions is a key to future market opportunities.

" Environmental regulations and social change for sustainable raw materials with less environmental impact are driving rapid change and innovation in all segments of the coatings market," says Michael T. Venturini, marketing director, coatings, with Sun Chemical Co.

"The trend continues to move forward in Europe and the United States, but is quickly growing in Asia driven by China's regulations for improved air quality and reduced VOC emissions."

This, he says, has required paint producers to transition to powder, waterborne or other low-VOC technologies. The ever-growing importance of waterborne technology has thus created innovation opportunities for resin manufacturers.

"Sun Chemical Advanced Materials is uniquely positioned together with our parent company, the DIC Corporation, to understand the global needs of our customers that focuses our research," he adds, "and development efforts on expanding our product offerings for sustainable coatings.

Sun Chemical works with DIC to provide resins with performance properties that are tailored specially for the end user's application. An example would be one-pack primers for adhesion to polypropylene and TPO that allow for lightweighting and recyclability of automotive parts.

"In addition," Venturini says, "we have developed a range of acrylic binders in both solvent- and water-based technologies that meet the stringent requirements of premium global automotive manufacturers. "

One of the latest green technologies Sun Chemical has launched is a series of products under its WATERSOL line. A group of self-emulsifying acrylic resins developed by DIC for automotive interiors, WATERSOL water-based resins deliver performance properties similar to solvent-based resins. They demonstrate, Venturini says, excellent corrosion resistance, high hardness, pigment dispersability and low-temperature film formation properties.

"We also recently launched WATERSOL WQS-364," he says, "a UV-curable water-based polymer for water-reducible coatings on plastics which contains a hydrophobic multifunctional methacrylate and urethane acrylate core surround-

ed by a hydrophilic group. This unique technology brings both excellent package stability and a level of chemical and solvent resistance to the cured films not seen with other UV-curable systems."

Engineered Polymer Solutions has also been beefing up its waterborne resins portfolio. One example, says Dr. Allen Bulick, a company researcher, is EPS 2799, a 100 percent acrylic, film-forming polymer for high performance gloss interior and exterior architectural coatings. It can be used in high through semi-gloss white, to neutral base architectural DIY or professional paints.

It features early high temperature block resistance, print resistance and fast hardness development. It is also low-tack, even in near zero VOC formulations.

A related resin, EPS 2741 is another entirely acrylic film-forming polymer, for high performance flat through semi-gloss interior and exterior architectural coatings. It offers

scrub resistance over a wide formulation space, meeting the ASTM D2486, MPI #53 and #141 standards, and features stain removal and washability, to the ASTM D4828 standard.

"It also has resistance to household chemicals and cleaners," Bulick states, "under ASTM D1308. It has self-priming properties, and offers tannin stain and water-soluble marker stain-blocking.

A third resin is EPS 2570, a self-crosslinking, styrenated acrylic emulsion offering, the company states, excellent gloss, corrosion and chemical resistance, as well as early water resistance and rapid hardness development. EPS 2570 provides the capability to formulate coatings at <100g/L VOC.

Some of the research issues with waterbornes were described by AGC Chemicals Americas' Kristen Blankenship at last year's Waterborne Symposium. Blankenship is business development manager – LUMIFLON FEVE Resins with AGC.

"The adoption of greener coating technologies is slow, especially in the US," she noted. "This could be attributed to many factors, but from the formulator's perspective, performance is key.

"Waterborne coatings have been used in architectural applications for decades, but typically these coatings are valued mostly for aesthetics, ease of use, and low cost. The use of waterborne coatings in industrial applications, where higher performance is required, is still uncommon."

"Formulating waterbased coatings, regardless of chemistry, is a challenge," Blankenship commented. "Organic resins are by and large insoluble in water; therefore, resins are supplied in emulsion or dispersion form.

"The first challenge in making a formulation is ensuring stability of the paint. Many additives as well as pH can neg-

atively impact stability. Poor stability sometimes can be seen immediately in the form of haziness/cloudiness or even phase separation. Oftentimes, however, it occurs over time. Oven age testing or simple bench top aging is useful in determining whether a waterbased paint is stable over time.

"The second challenge is forming a coalesced film. Considering most waterbased resins are in emulsion or dispersion form, the resin itself is in the form of particles. As the water evaporates, those particles pack but ideally, they need to swell and make contact with one another to make a nice film."

Both of these challenges, she added, make formulating waterbased coatings difficult and require much research and development. When formulating a waterbased two-component coating, the difficulty becomes even greater.

Not only do the aforementioned challenges remain, but a third, and quite significant challenge is added. Polyisocyanates react with hydroxyl groups. They can react with the hydroxyl group on the resin (polyol) but they can also react with the hydroxyl groups on water itself.

The desired reaction is between the polyol and the polyisocyanate which results in polyurethane bonds. The reaction between water and polyisocyanate can result in the formation of polyurea instead of polyurethane.

"Fluoroethylene vinyl ether (FEVE) resins are fluoropolymer resins that provide coatings superior resistance to UV degradation," she explained. "For years, though, testing primarily focused on FEVE solvent-based coatings only, but with the rapid shifting of the coatings industry towards more environmentally friendly coatings, testing of waterbased FEVE coatings was needed."

FEVE resins can be used in 2K component waterbased coatings for exterior environments where extreme resistance to UV degradation is required. Preliminary testing has also shown waterbased 2K coatings based on FEVE resins to have comparable corrosion resistance to an FEVE solvent-based 2K system.

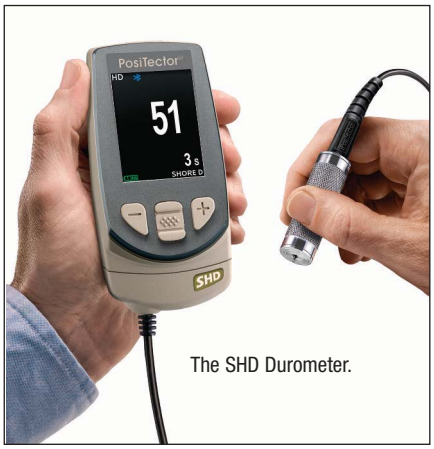
When formulating with FEVE resins in waterbased 2K coatings, as with all waterbased 2K coatings, attention to NCO/OH index must be paid. Another formulating technique, the use of catalyst, shows promise in improving overall cure and thus performance properties of a 2K waterbased coating.

Speaking of upcoming developments with FEVEs, she observed that, "Further studies on the relationship between cure and both weatherability and corrosion need to be reviewed. Future studies will focus on NCO/OH index, the impact of catalysts, and the effect of different polyisocyanates on final film properties."

As with other areas of R&D, waterborne resins continue to undergo developments. Quite how they will play out is impossible to predict, but there is a sense in the laboratories that some of the more problematic areas of waterbornes are finally beginning to yield to new technologies. ■

new **PRODUCTS**

Hardness Durometer



The SHD Durometer.

The new PosiTector SHD Shore Hardness Durometer is a handheld electronic instrument that measures the indentation hardness of non-metallic materials. Two durometer models are available for different hardness ranges: Shore A and Shore D.

An easily read digital display has a reset feature to instantly restore factory settings. The durable case repels solvents, acid, oil, water and is dust resistant, and includes a shock-absorbing, protective rubber holster with belt clip and has a two-year warranty on the body and probe.

A Certificate of Calibration showing traceability to NIST is included. In Auto Ignore mode, the unit disregards readings below 20 and above 90, per international standards.

A Hi-RES mode increases displayed resolution to 0.1, and a test block is included to verify operation. This durometer conforms to national and international standards including ISO and ASTM.

The unit continually displays/updates average, standard deviation, min/max hardness and number of readings while measuring. It also features screen capture, to save screen images for record keeping and review.

The HiLo feature alarms audibly, and visibly alerts a user when measurements exceed user-specified limits. There is a USB port for fast, simple connection to a PC and to supply continuous power.

A PosiSoft USB drive stores readings and graphs can be accessed using universal PC/Mac web browsers or file explorers. The unit also has a PosiSoft suite of software for viewing and reporting data. No software is required, but software updates via the internet keep each gauge current.

www.Gardco.com

Coating for Pipes and Tanks

NSP Specialty Products is distributing a new coating for potable water tanks and pipes that replaces the company's NSP 120. Seeing a need to address modern problems in the water industry, NSP contacted Wolverine Coatings Corp., a formulator and manufacturer of heavy-duty, industrial coatings and lin-

ings. Tasked with NSP's requirements, Wolverine developed LiquaTile 1172, a new coating and internal lining product that cost effectively protects potable (drinking) water storage tanks at a time of tight budgets for infrastructure maintenance and expansion.

Derived from the same research and development team behind Advanced Hybrid Cycloaliphatic (AHC) technology, LiquaTile 1172 is a fast-cure, low-odor product. It attains industry-leading water quality levels, the company says, without requiring expensive plural component application equipment and special techniques.

"Our LiquaTile 1172 passes higher water quality standards than typical coatings can while reducing installation and life cycle cost," said Eric Swanson, president of Wolverine Coatings Corp. "No other coating for potable water offers this combination of short and long term advantages. Contractors will love having greater flexibility and stronger competitive stance."

LiquaTile 1172 is a 100 percent solids epoxy coating that is UL water quality-certified to US and Canadian NSF/ANSI 61 & NSF/ANSI Standard 372. It is certified for tanks 50 gallons and above, as well as for pipes 16-in. in diameter and above.

It can be applied with a brush and roller or airless spray equipment, with return to direct water contact in five days. No specialized equipment or curing procedures are required.
www.nspspecialty.com

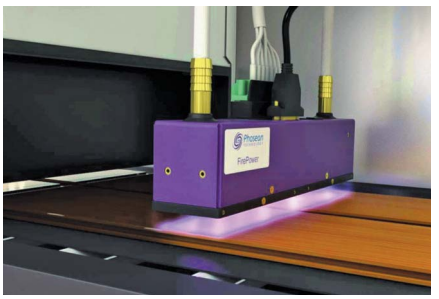
Fasteners for Racks

RIGHTech Fabrications is offering both metric and standard titanium fasteners, available from stock, to address all bolt, nut and washer needs.

As it has for decades, RIGHTech can still produce racks with inch-style fasteners. Or, it can provide the same rack designs with metric fasteners, all at equivalent prices.

RIGHTech keeps a complete inventory of aluminum and stainless steel fasteners as well. All materials of construction are offered in standard, fancy and custom heads and threads: hex-head bolts, hex-head cap screws, hex nuts, flat washers, threaded rod, flat and pan-head Phillips, socket-head cap screws, and studs in custom sizes.
www.RIGHTechFabs.com

LED Curing System



Phoseon FireJet FJ100 LED system.

Phoseon Technology has increased the peak intensity of its FireJet FJ100 LED curing system by 50 percent, up to 12W/cm2.

The FireJet FJ100 provides a combination of size and power for space-constrained environments requiring high intensity curing performance. Using the company's WhisperCool and TargetCure technologies the unit reportedly provides reliable, consistent performance at a quiet operating level.

The system is aimed primarily at UV inkjet wide-format systems, and is capable of curing at high speeds for small, medium and grand format digital printing systems. It is also recommended for many large, single-pass UV inkjet and wood coating applications.
www.phoseon.com

Nozzles for Sealing

Chemetall, the surface treatment supplier that is now a business unit of BASF's Coatings division, has introduced Jurblami application nozzles for high-quality, fast and reproducible sealing operations. The nozzles allow manufacturers to significantly reduce the time required to apply the sealant to the rivets on fuel tanks and fuselages.

The specially shaped nozzles are suited for the application of Chemetall's Naftoseal polysulfide sealants. The Naftoseal portfolio offers a wide range of medium and low-density, chrome-free, fast-curing, multi-purpose aircraft sealants.

With their bell-shaped heads, the Jurblami application nozzles encapsulate the rivets and nuts, creating an effective mold for the sealant coating. This provides high corrosion protection for those parts exposed to water, corrosive oils or sudden temperature changes.

As the exclusive global distributor for the

Jurblami application nozzles.

Jurblami products, Chemetall can offer the application nozzles in different sizes to fit various dimensions of nuts and rivets, enabling fast and efficient sealing operations. In addition to rivet sealing, the application nozzles can also be used for the sealing of drilling holes and fillets.
http://chemetall.com

Automatic Spray Units

DeVilbiss' new AG-360 series automatic spray applicators feature the company's QuickClean technology. They are available in various machine mounting formats, to provide a universal finishing solution for all industrial low pressure applications.

DeVilbiss has developed the low pressure, air-atomization AG-360 Series to provide the combination of finish quality, durability and versatility it says is needed in low pressure finishing applications today.

"The DeVilbiss AG-360 line is available in models that are built to be cost-effective with maximum control and serviceability," explained Jesus Guerrero, global marketing communications manager. "There are multiple options and formats for both the general needs of many industrial applications and the individual needs of specific industries, such as wood, glass, ceramics, and cosmetics."

The series features different spray technologies: CONVentional, HVLP and Trans Tech (high efficiency). Available fluid/needle nozzle combinations include stainless steel, nitride,

DeVilbiss' AG360 series spray guns.

and tungsten carbide.

There is a selection of Air Caps for environmental compliance, transfer efficiency, atomization power and application requirements. There are also stainless steel fluid passageways for water-based and solvent-based coating applications.

Quick detachable mounting manifolds provide fast and easy maintenance, and the units are QuickClean coated for increased durability and easy cleaning. The compact size and weight allow for easy positioning and precise alignment. There are multiple options and formats to suit various application requirements, as well as independent fan, atomizing and trigger air, which are needed for robotic and fully automatic machine applications.
www.DeVilbiss.com

High Molecular Weight Topcoat

Intech and Chemours have introduced 532G-9410, a new, high molecular weight PFA topcoat. Similar to 532G-7410, this Teflon-based coating, when cured, has a high melt flow rate resulting in quicker melt flow and a super smooth finish. Like all these companies' PFA topcoats, this coating is FDA compliant.

This finish reportedly has excellent stress crack resistance, which makes it good for food grade applications that experience rapid cycling of temperatures. The improved melt flow rate requires less processing time than other high molecular weight finishes while providing a smooth, glass-like finish.
www.intechservices.com

Preservative for Biocides

Lonza is launching a new addition to its Proxel range of preservatives. This new in-can preservative is designed to address increasing market demand for methylisothiazolinone- (MIT-) free biocide formulations.

Proxel Spektra preservative is a dual-active, broad-spectrum biocide for wet-state preservation of water-based paints, adhesives and construction chemicals. This formulation offers powerful extensive protection at target dose levels that will not require European EU H317 labeling.

It is free from formaldehyde, MIT and CMIT, and is a low-viscosity solution that is pH and temperature stable. It benefits from the use of two complementary active ingredients providing an enhanced antimicrobial efficacy and protection from bacteria in a wide range of industrial applications.

"Regulatory requirements are a key driver for biocide selection. Proxel Spektra Preservative has been developed to not only enable customers to avoid the EU H317 labeling requirements but also to provide robust, long-term preservation for the target industries," said Dave Doles, head of Lonza's Materials Performance and Protection business unit.
www.lonza.com

Renewable Neutralizing Agent

Checking Clariant's new Genamin Gluco 50.

Clariant claims to break new ground for the indoor paint and coatings segment with the launch of what it says is the industry's first renewable-based, VOC/SVOC-free1 and hazard label-free neutralizing agent: Genamin Gluco 50. The new sugar-based additive innovation supports formulators in meeting consumer demand for low odor, healthier and easy to apply indoor paints and lacquers. Its introduction is also significant for ecolabel certified paints, where a reduction in additives can help to keep a formulation within low VOC/SVOC limits.

Genamin Gluco 50 combines its sustainable profile with performance-boosting properties to set it apart from existing neutralizing options for waterborne coatings. In contrast to standard neutralizers, such as ammonia or caustic soda, Genamin Gluco 50 does more than adjust the pH-value of a formulation to around 8–10, to create a stable paint system with minor interactions between the paint. It also enhances the performance and quality profile of the waterborne coating.

It acts as a 3-in-1 additive, being neutralizer, compatibilizer and stabilizer in one additive. The product achieves additional functionalities and proven advantages for the formulation, such as improving storage stability and pigment compatibility, and reducing flash-rust formation. In certain aspects, its performance is proven to be superior to that of alternative multifunctional additives such as aminomethyl propanol (AMP), currently under scrutiny and substance evaluation by the ECHA (European Chemicals Agency).

The product improves paint lifetime and storage stability even in colder regions. Gloss lacquers containing Genamin Gluco 50 show no syneresis, sedimentation or changes to pH-value or viscosity after storage at 50 deg. C for 28 days. The lacquer also remains stable after five freeze-thaw cycles.

It offers increased tinting strength thanks to better pigment compatibility. Waterborne paints and pigment dispersions neutralized with Genamin Gluco 50 show higher tinting strength.

Enhances metal protection due to reduced flash rust formation. It also helps to protect the coating film against discoloration caused by rusting.

It is VOC/SVOC free and reportedly has a pleasant smell. It also helps to make paints and coatings easy to apply. The company says it has no negative influence on paint properties, such as gloss or on drying or hardness behavior.

Crosslinker for PURs

Vencorex has launched Easaqua X D 870, a high-performance polyisocyanate crosslinker for two-component waterborne polyurethane formulations. This new grade is specifically designed to meet the most stringent requirements of VOC emissions regulations.

The product is a combination of HDI/IPDI

derivatives in Easaqua technology offered in an eco-friendly solvent, PGDA. One of the key benefits is a low viscosity that makes it ready to use.

It also exhibits, the company says, the best-in-class balance between compatibility and ease of emulsification into aqueous systems, together with superior performances in terms of drying time and productivity improvement. It also has high chemical resistance.

www.vencorex.com

Compatibilizer for Pigments

New TEGO Color Aid technology from Evonik expands, the company says, the potential uses of pigment concentrates in paints and coatings based on alkyd resins. Unlike previously available compatibilizers, the new technology benefits both organic and inorganic pigments.

Where most universal pastes work well in a wide variety of coating systems, alkyd resin coatings remain a challenge: pigments cannot be readily stabilized in the binder, resulting in uneven color intensity. Referred to as a compatibilizer, the new TEGO Color Aid is added to formulations to increase compatibility between the pigment concentrate and the binder.

As an additive in the coating base, the compatibilizer can force water out of the pigment concentrate once the latter has been added. This allows the full effect of the dispersion additive in the pigment concentrate to develop, stabilizing the pigments in the coating base and thus optimizing the absorption of the color paste and the distribution of color.

The key advantage of the new technology is that properties of the finished coating remain virtually untouched. The amount needed of the new product is very small relative to existing compatibilizers.

In addition, the structure of the amino amide surfactant was designed to have only a slight impact on the drying time of the coating. Color values likewise remain constant and do not need to be adjusted. As such, the yellowing process remains unaffected.

The additional costs of the compatibilizer barely register, given that such a tiny amount is necessary and the technology is only used precisely where it is needed, in the alkyd resin system. The use of TEGO Color Aid can also reduce the cost of developing or updating universal pastes.

www.evonik.com

Abrasive Blast System

The Graco EcoQuip 2 EQp.

Graco Inc. has launch the EcoQuip 2 EQp, part of the EcoQuip 2 family of Vapor Abrasive blast equipment. Featuring a portable cart with lift handles that allows users to transport the device from one job to another, this new machine is offered as an affordable option for many surface preparation jobs.

"At the end of the day, it's about finding the best machine to get the job done, and our new addition to the EcoQuip 2 family promises to do just that," said Eric Rennerfeldt, Graco product manager for the EcoQuip line of products. "Our EQp is a unique offering in the market because it is as powerful and easy to use as the larger EcoQuip models, but at a more affordable price for smaller scale jobs. Contractors and restorers can now complete their blasting jobs quickly and effectively without blowing the budget."

While there is ultimately no such thing as dustless blasting, the EQp emits up to 92 percent less dust than traditional dry blasting, and works with coarse, fine or non-destructive blast media. The equipment is designed for a variety of applications including steel and concrete surface preparation, graffiti removal, paint and stain removal from wood, brick and patio cleaning, and iron fence and railing preparation. Long blast times of 30 to 60 minutes between refills, along with low water usage, allows users to complete the job quickly and efficiently. In addition, the machine features fast removal rates compared to other methods, such as pressure washing, with blast pressures up to 150 pounds per square inch (psi).

www.graco.com

Stabilizers for Non-Biocide Paints

Clariant is offering easily applied, biocide-free mineral paints that use the stabilizers.

Dispersogen SPS and Dispersogen SPG. These, the company says, lead to better handling properties of mineral paints while improving their storage stability, and they are suitable for eco-label certified paints.

The Dispersogen SPS/SPG combination offers a advantages compared to the current benchmark two-product stabilizer system. Extensive testing in organosilicate paints, Clariant says, confirms less change in viscosity over time, and the formulation shows less thickening during storage. Mineral paint based on it has an enhanced rheology profile which makes it easier both to stir or homogenize before use and to apply onto a surface with a brush or roller. The extent of brush or roller marks, also known as leveling performance, is comparable to the current benchmark.

Clariant offers Dispersogen SPS as a standalone stabilizer for manufacturers looking to go to the next level by offering even easier application and smoother surface results from their mineral paint formulation.

Alexander Snell, head of sales, industrial applications, Clariant Business Unit Industrial & Consumer Specialties, commented: "With our new Dispersogen stabilizers, Clariant has achieved a valuable breakthough in improving the storage and useability of silicate and organosilicate paints. Mineral paints are a major advance in terms of fulfilling consumer health requirements, and these new advantages will contribute to making biocide-free paints an even more attractive option for decorating interiors and improving indoor environments."

www.clariant.com

Color Matching System

Datacolor has launched ColorReaderPRO, a professional color matching device. This is an ultra-portable, Bluetooth-connected color selection device that works standalone or connected to the ColorReaderPRO mobile

ColorReaderPRO in use.

app. It allows painters to match a client's color choice to a corresponding paint color in seconds.

The device includes a color selection device that stores up to 10,000 colors and can be used standalone with the OLED display or with the ColorReader mobile app. It also has a software development kit, and is available for both iPhone and Android phones.

www.datacolor.com/colorreadpro

Magenta Quinacridone

Sun Chemical Performance Pigments has launched its new Quindo Magenta 202 pigment.

This new quinacridone pigment delivers highly pigmented bases in low-VOC, high-solid coatings.

Suitable for water and solventborne systems, Quindo Magenta 202 facilitates styling for highly transparent and chromatic effect shades. It offers, the company says excellent durability and fastness properties for automotive and high-performance coatings. Its low rheology provides easy formulating using one product for all systems.

www.sunchemical.com

Corrosion Test Coupons

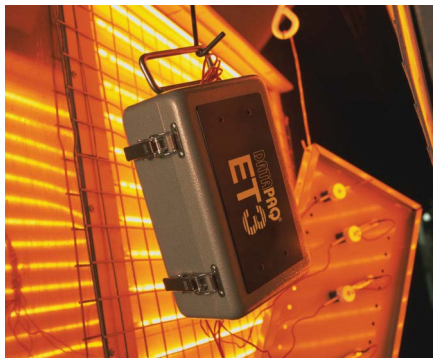
Q-Lab's CX-series corrosion test coupons ensure repeatability and reproducibility when performing laboratory corrosion testing. They can help a user independently monitor the test conditions in the chamber by measuring the mass loss of the coupons as the test progresses.

These corrosion coupons are designed to meet the stringent requirements specified in many international modern corrosion test methods. All coupons include a certificate of analysis, come pre-cleaned, and are ready to use right out of the package. This allows the user to simply weigh the panels and place them in the tester, saving time and effort.

They meet requirements of GMW14872, ASTM B117, SAE J2334, SAE J2721, ISO 9227, and VDA-233-102. They are also available in a variety of shapes, alloys and finishes.

www.q-lab.com

Over-cure Testing System



DATAPAQ EasyTrack3 system.

The newest generation DATAPAQ EasyTrack3 system is for profiling the oven cure of painted and powder-coated products. Fluke Process Instruments has equipped the data logger with a rugged and light polycarbonate casing that withstands harsh treatment and heat up to 100 deg. C, without distortion and without harm to the electronics.

Versions with four or six thermocouple channels are available. Data is stored in a non-volatile memory, of which the capacity has been tripled to up to 18,000 readings per channel.

The loggers use replaceable 9-volt batteries. An intelligent power management ensures a long battery life for 50 and more profiling runs. Calibration certificates stored aboard the logger can be printed anytime.

When the logger is connected to a PC (via USB), the software now starts automatically. Reviewing and analyzing the data, users can dynamically change the language.

Logger diagnostics is much facilitated by a quick reference guide and animated tutorials. For remote diagnostics, status data can be emailed to the manufacturer's tech support. Fluke Process Instruments supplies a versatile range of profiling systems with probes and thermal barriers to suit a variety of applications.

The new pro version logger carries out up to three consecutive profiling runs before data download to a PC. It features a traffic light indicator that instantly shows whether process criteria have been met. The DATAPAQ EasyTrack Insight Professional software includes advanced analysis functions such as rise/fall, peak difference, area under curve calculation, marking of up to six oven zones in the temperature graph, a probe map for high repeatability, saved zooms for more comfortable reviewing and sharing of data, and customized profile reports.

www.flukeprocessinstruments.com

Basecoat for Effect Coatings

SKYscapes Shimmer Basecoat is a new offering from Sherwin-Williams Aerospace Coatings. Intended for use in effect coatings,

Sherwin-Williams SKYscapes shimmer basecoat.

SKYscapes Shimmer Basecoat will reportedly convert any solid basecoat into an effect finish without losing the clean vibrancy of the color itself. It is claimed to be a cost-efficient, production-friendly solution for all commercial and general aviation aircraft.

SKYscapes Shimmer Basecoat 850 series (SH colors) uses translucent pearl/mica pigments to create a fully repairable, durable shimmer" finish over the entire plane design without sacrificing color. It is designed to dry quickly at ambient temperatures, without requiring any sanding between coats.

"Matching customer micas is time consuming, and has traditionally been an unavoidable stall in the maintenance process," said Julie Voisin, Sherwin-Williams Aerospace Coatings global marketing manager. "SKYscapes Shimmer Basecoat converts entire solid-color designs into an effect coating through one application process."

Currently available in silver or prismatic/multi-color, the 850 series is designed to work with Sherwin Williams SKY-

AD INDEX

scapes Basecoat/clearcoat system. It is used as part of a SAE AMS 3095 qualified system.
www.sherwin-williams.com

Soluble Salts Tester

The Positector SST Soluble Salt Tester measures the concentration of soluble salts (salt contamination) on metal surfaces in accordance with ISO 8502-6, 8502-9. The gage also features an onscreen interface that guides users through the Bresle test method.

The automatic storage of a background (blank) measurement prforms multiple tests. The unit displays test duration, sample temperature, conductivity (µS/cm) and surface density (mg/m2 or µg/cm2).

The device resists solvent, acid, oil, water and dust, and is weatherproof. It is also shock-absorbing, having a protective rubber holster with belt clip. There is a two-year warranty on the gage body and probe.

A long-form Certificate of Calibration showing traceability to NIST is included, and there is a certified conductivity standard (calibration solution) to verify probe accuracy, certificate included.

The device features automatic temperature normalization and sample temperature reporting, and conforms to national and international standards including ISO, NACE, SSPC, IMO and US Navy.

The PosiTector body accepts all PosiTector SST, 6000 III, 200, RTR, SPG, DPM, SHD and UTG probes, easily converting from a soluble salt tester to a coating thickness gage, surface profile gage, dew point meter, Shore hardness durometer or ultrasonic wall thickness gage.
www.gardco.com

AkzoNobel

Chemcraft®

A Great Finish is Only the Beginning

Aquaprime®

Waterborne Pigmented Primer

The universal primer that supports all Chemcraft waterborne and solvent borne topcoats

- Can be used under all Chemcraft systems
- Very high solids – 65%
- Excellent sandability
- Impressive hold out and film build – minimal shrinkage
- High hide and good filling capabilities

Booth #6203

AWFS VEGAS

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

Distributing specialty raw materials to the coatings, inks, plastics and adhesives industries.

We are the only Canadian distributor with a state of the art laboratory providing innovative solutions.

We are your active intermediate.

Distributeur de matières premières de spécialités aux industries de la peinture, de l'encre, du plastique et des adhésifs.

Nous sommes le seul distributeur canadien avec un laboratoire à la fine pointe de la technologie pour des solutions novatrices.

Nous sommes votre intermédiaire actif.

INORTECH
EMCO

CUSTOMER SERVICE • SERVICE À LA CLIENTÈLE
INORTECH: 1-800-661-2064 • EMCO: 1-905-405-6288
www.inortech.com