CFCM
CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

Corporate Profile Issue

Double Show Issue:

UV/EB 2017

Powder Coating 2017

PLUS

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

www.cfcm.ca
JANUARY/FEBRUARY 2017

Chemcraft®

A Great Finish is Only the Beginning

AkzoNobel

Ruffino Cabinetry talks about brand growth through relationships

We traveled to Fort Myers, Florida to talk with Steve Ruffino, founder and CEO of Ruffino Cabinetry, and his Chemcraft Distributors Oscar and Mario Hernandez of Famis Inc. located in Miami and Naples, Florida.

Ruffino Cabinetry was founded in 1981 and produces luxury custom cabinetry and fitted furniture for projects throughout Florida and selected national and international projects. Their award winning work has been featured in several publications including Home & Design and Florida Design.

"While we're obviously cabinet makers, we consider our true specialty to be our custom colors and finishing techniques," said Steve Ruffino, "it offers our customers more options than they can typically get from the larger manufacturers. It's what sets us apart.

"I started the business as a solo operation in 1981," said Ruffino, "and now we have 60 employees. We don't advertise and we don't have a sales force to speak of. Most of our business comes from longtime repeat customers and referrals.

"Our reputation for quality has established us as a brand name," continued Ruffino, "we now have designers and architects coming to us as their preferred cabinet company.

"A few years ago we were experiencing a severe production bottleneck in our finishing area. We realized that we needed to find a new partner that could help take our product and our production to the next level – that's when we reached out to Famis and Chemcraft."

Front, L to R: Steve Ruffino - CEO, Ruffino Cabinetry holding grand-daughter Stella Rose Ruffino, Mario Hernandez - Vice President, Famis Inc., Mike McIntyre - Operations Mgr., Ruffino Cabinetry.
Back, L to R: Meghan Ruffino, Stephen Ruffino - Vice President, Ruffino Cabinetry, Carol Ruffino - Sales / Design Mgr., Ruffino Cabinetry, Oscar Hernandez - Partner / Sales Director, Famis Inc., Fernando Rivadeneira - Sales Representative, Famis Inc.

"One of our specialties at Famis is custom engineering automated and semi-automated finishing systems," said Mario Hernandez, "so we were confident that we could help improve their work flow. But first we needed to identify the correct Chemcraft product to fit the system.

"We brought in our Chemcraft technical representative and together we did extensive testing," continued Hernandez, "the solution we arrived at was Chemlife® 24.

"Chemlife 24 was a perfect fit with the on-demand finishing system we set up, and its properties allowed us to greatly simplify their finishing process," he said.

"Between the equipment upgrades and Chemlife 24," added Ruffino, "a step that was taking us 8 hours was reduced to 40 minutes. Overall we've seen at least a 50% improvement in production time."

"Chemlife 24 allows us to use this type of system," said Oscar Hernandez, "we're circulating both white and clear and because the same catalyst is used for both, the number of steps involved have been reduced.

"In addition," continued Hernandez, "the 24 hour pot life of the product ensures that there aren't fluctuations in the sheen and helps offset any external factors that might cause problems in the finish such as humidity."

"And, with Chemlife 24," said Ruffino, "we have far less of an issue with formaldehyde off-gassing than we had with the product our previous supplier had us using. Between our distributor Famis, and Chemcraft we get the attention to detail, knowledge and support we need. It's a relationship we can grow with."

Visit chemcraft.com to locate your nearest distributor.

Let our history improve your future. For more than 200 years, the world's leading manufacturers of cabinetry, furniture, flooring and building products have depended on AkzoNobel industrial wood coatings to beautify and protect their products.

We have some of the brightest minds in the business in our strategically placed R&D laboratories around the world, set up to collaborate and share knowledge with each other. That gives our customers a resource for innovation that we feel is unmatched anywhere and ensures that our customers stay ahead of regulatory and environmental requirements.

Our market leading wood coating systems are robust and efficient, and are designed to be user-friendly and provide optimum performance in any production environment. We offer a complete line of stains, lacquers, catalyzed coatings, urethanes, polyesters, and UV-cured wood coatings all backed by experienced support teams of technicians, chemists, engineers and sales representatives to ensure the highest efficiency and performance of our coatings.

Our experts work closely with our customers providing market-leading custom formulations and systems that adapt to the unique complexities of their product design, substrate, finish and manufacturing requirements. And, our industry leading trends, color styling and design services helps our customers maintain market leadership.

Global innovation and local customization backed with outstanding customer support and service. It's no small wonder that our finishes protect and beautify more wood products than any other company in the world.

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

Environmental Concerns

AkzoNobel welcomes our role in preserving our planet and have been ranked at the top of the Dow Jones Sustainability Index for a number of years. Beyond merely following the regulations governing manufacturing and our products, we strive to exceed the most stringent environmental standards without compromising the look, durability, or ease of use that distinguish our coatings.

We continue to drive and be the leader in "green" technology with a large percentage of our R&D time being spent coming up with new solutions to this growing requirement.

We have complete systems to meet the need for lower VOC's and formaldehyde free coatings using both conventional and UV cured technologies. We have also developed a full line of 275 VOC g/l coatings in anticipation of regulatory changes. Our carefully tested, fully compliant coatings will enable our customers to keep producing without delays when the stricter standards take effect. AkzoNobel offers creative, customized system changes to reduce your VOC tonnage.

Tell us about your environmental concerns. We've probably already solved them. If your dilemma is new to us, we will eagerly seek out the creative, economical solution that's best for you. We owe our success to such partnerships. Your challenges are our opportunities.

Safety First

AkzoNobel takes the safety of our personnel as our top priority. We have successfully implemented several new safety programs in our facilities, which are monitored by the personnel on the shop floor as well as management at all facilities. AkzoNobel has re-engineered several pieces of equipment with the goal of a safe work environment for all AkzoNobel employees. AkzoNobel globally recognizes Safety Day's throughout the year with all of our employees continuing to take the following pledge "No one will be injured on my watch, in my work area, on my team, or in my location." This is "Every Employee's Responsibility"

Distribution

The Chemcraft® Distribution brand continues to be the brand of choice throughout our strong distribution network. Chemcraft® distributors have factory trained staff to help you with all your finishing requirements and applications. This network allows our technology and local expertise to be available to all businesses. To find a distributor near you along with information and tools regarding the Chemcraft® brand products please use our distribution website. www.chemcraft.com

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Thinking Past NAFTA

Any businessperson I've ever known whose company prospered beyond its first few years has been good at adapting. Whether the issue is changing tax regimens, new environmental laws, shifting consumer tastes, or new technologies, the ones who've stayed in business roll with the punches by finding creative responses.

The question mark for Canadians right now is the future of NAFTA. It's axiomatic for any new government that it needs to launch its most ambitious plans early on in its term, because opposition gets stiffer if the government's popularity fades. We can therefore expect to see some action on this front from Washington this year; and it might call for some very creative responses.

The subject is far from simple. The US, Canada and Mexico have benefited mutually from NAFTA, and many businesspeople are obviously concerned that altering the trade patterns will cause them difficulties. And protectionism has an immediate appeal to some voters, but doesn't necessarily yield the benefits its advocates anticipate.

The real difficulty with any negotiations on trade, as the UK is discovering from dealing with the Brexit, is that they are long. Major corporations and economic sectors push for modifications or exemptions through direct lobbying or through their trade associations, and there are political arguments that come up as well. The talks might begin with a grand gesture, but they only reach the point of a final signature after a long march through a myriad details.

The auto industry makes a good case-study here. Its complex supply lines are integrated across borders, and while they could be reconfigured, that isn't easily done in every instance. Sometimes a parts supplier from outside a particular country is not just cheaper, but is simply better than any other, or it controls patents for a certain technology. Having to requalify supplier companies through several tiers is neither easy nor cheap.

In other words, the auto industry (and it isn't alone) is going to voice strong objections to opening up NAFTA.

The status quo will almost certainly continue for two to three more years at least, as such issues are hashed out, and the final document(s) might look more like what we already have than some protectionist advocates want. The real problem for Canadian manufacturers, obviously, is not that the rules will change, but that they are changing, with no clear indication of how. The uncertainty is the threat as much as the actual changes.

It's a lot easier to roll with the punches after the punches have been delivered. But doing some creative thinking, and soon, about your own company's main customer segments, and how they might be affected, is a good topic for next month's sales or production meeting.

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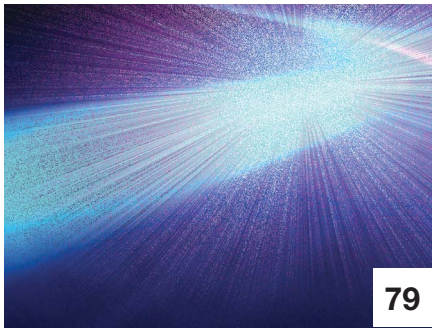

Industrial Finishing

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Paint and Coatings Manufacturing

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With more than 35 years of experience as an industrial wood coatings manufacturer, CANLAK plays a leading role in the woodworking industry. We invest time and effort in the development of high quality products and we are proud to provide our customers with unparalleled service. The success of our company rests on bringing to market made-to-measure products specifically designed to meet our customers' needs.

A COMPANY GEARED TOWARDS THE FUTURE

OUR MISSION

Develop and produce high quality coatings designed to help our clients meet evolving market needs. CANLAK wants to be the Canadian leader in the manufacturing of industrial wood coatings. By concentrating our efforts on quality, customer service and innovation, we firmly believe that our company will meet its objectives.

PERFORMANCE, QUALITY, EXCLUSIVITY

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CANLAK offers much more than a complete product line. We have a team of employees totally dedicated to customer satisfaction.

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CANLAK

DARE TO TAKE A CLOSER LOOK !

Alberdingk Boley, Inc.

Alberdingk Boley, Inc. (ABI) is a global supplier of innovative water-based acrylic emulsions, NMP-free & solvent-free polyurethane dispersions, UV-curable dispersions, castor oil and linseed oil polyols and acrylic polyurethane copolymers.

With a legacy of more than 185 years in castor and linseed oils, driven by tradition and innovative technology, ABI is a proud, responsive supplier of environmentally friendly water-based emulsions and dispersions to the paint and coatings, adhesives, and graphic arts industries. Our US headquarters is based in Greensboro, North Carolina.

With a wide array of technology platforms of specialty emulsions and polyurethane dispersions we partner with our customers to provide tailor-made solutions and help them succeed and lead in their respective markets.

Our product portfolio is innovative and high performance; 50% of our products have been developed in the last 5 years to meet ever changing market needs. Our skilled application staff is always willing and available to help guide in formulations.

For more information, please contact us at 336-454-5000 or info@alberdingkusa.com

AC 36xx High Performance Acrylic Emulsion Series for Industrial, DIY & Contractor Coatings

AC 3600: Outstanding block resistance, good chemical resistance, long open time, and low VOC capable.

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AC 3687: The newest member of the 36xx series. Very low MFFT (low VOC capable – 50 g/L), excellent blocking resistance, long open time, excellent hot tire pickup resistance and good chemical resistance.

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www.alberdingkchina.com

Andicor was founded in 2002 on the strengths of its original supplier partners for the Coatings and Ink market in Canada, and has built on that strong foundation by adding complementary product lines that meet the needs of an increasingly demanding marketplace. Now in its 15th year of operation, Andicor continues to offer formulators cost-effective products from world-leading suppliers that improve performance, meet specific regulatory or environmental challenges, and which are available for immediate delivery from local warehouses across Canada.

Andicor's separately managed division for specialty packaging products offers a complete range of steel pails, plastic pails, tin and hybrid cans from BWAY, North America's leading container manufacturer for the CASE market.

In 2016 Andicor expanded its offering of specialty chemicals for the CASE market, and now distributes HARDLEN® Adhesion Promoters for polyolefin substrates and TOYO-TAC® Maleic acid modified Polyolefins from TOYOBO, a global manufacturer of high performance products.

Andicor now distributes for FCC, a division of Sino-Holding Chemicals and a leading manufacturer of rheological additives including FRGEL® conventional and self-activating Organoclays and SUPBENT® Smectite Additives for water-based applications.

Also in 2016, Andicor began working with HPF The Mineral Engineers, the high-performance filler division of leading German industrial minerals company Quarzwerke. These fillers improve the technical characteristics of finished products mainly through the use of surface treatment to optimize the effects at the interfaces of the polymer matrix and the filler system.

Please visit our web-site (www.andicor.com) to download complete listings of all the products we offer each market, or contact your local Andicor sales representative to learn more about these products and to order samples, or email us at info@andicor.com.

Andicor complies with CACD Responsible Distribution: 2008 Code and is also a member of CPCA (Canadian Paint & Coatings Association), TRFA (Thermoset Resin Formulators Association), and PAC (Packaging Association of Canada).

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EMCO Acquires Inortech Chimie

EMCO Chemical Distributors Canada Ltd., a wholly owned subsidiary of EMCO Chemical Distributors, Inc., Pleasant Prairie, WI, says it has completed the acquisition of Inortech Chimie Inc., Terrebonne, QC. This acquisition, the company states, reflects EMCO Chemical Distributors' ongoing commitment to increasing its market position in the specialty chemical industry.

The purchase of Inortech expands EMCO's range of product offerings and enables the provision of superior support services. The synergies of EMCO Chemical Distributors Canada and Inortech generate a full line specialty distributor and a leader in the CASE (coatings, adhesives, sealants and elastomers), ink and plastics industries.

"EMCO views this acquisition as an amalgamation of strengths," says Edward Polen, president and CEO of EMCO Chemical Distributors, Inc. "Inortech's excellent technical sales force, unsurpassed R&D support and recognizable name in our Industries, will provide us greater opportunities to grow."

Inortech is a specialty chemical distribution company with over 25 years of serving customers in Canada, with regional public warehousing throughout Canada. Inortech represents various chemical producers and manufacturers.

Electrometals Canada Becomes emew corp.

Electrometals Canada Inc. has officially changed its name to emew corporation. This change, the company says, not only commemorates the 20-year heritage of the emew brand, but also signifies the evolution of emew technology beyond electrowinning with diversification into new applications and markets. In the spirit of rebranding, it will continue to innovate with clean technology offerings to provide products and services for environmental remediation, fluid treatment, and metal production.

In the coming weeks customers will notice changes to the website including migration to the new domain, www.emew.com This will also affect email addresses, which will soon be in the format of first.last@emew.com. The Electrometals email addresses currently in use will continue to function to ensure seamless and uninterrupted communication.

Eastern Coatings Show Coming in May

Harrah's Resort, location of May's Eastern Coatings Show.

The second edition of the Eastern Coatings Show will be held next year from May 15 to 17. The location is Harrah's Resort in Atlantic City, NJ.

Organizers say the 2017 edition has been expanded to include panel discussions, and two tracks featuring presentation of over 40 technical papers. The exhibit space has been increased over the last show, to allow for 150 exhibitors.

The show is being promoted as a platform to meet with raw material, packaging or equipment suppliers as well as to attend technical presentations and panel discussions on the latest technologies in the coatings industry. It is hosted by the Philadelphia Society for Coatings Technology, the New England Society for Coatings Technology and the Metropolitan New York Coatings Association.

Eisenman Corp. Introduces Piggable Paint System

Eisenman Corp. is promoting a piggable paint system in North America. The company recently bought the German manufacturer of it, LacTec, which is based in Rodgau, near Frankfurt. The method can offer significant paint savings in changeovers, as well as saving time in clean-up.

According to LacTec's Mike Menzel, the 'pigs' in the process are movable plugs that go into the paint-line, and are available in three sizes. They can be moved within the line because they contain magnets, and when they are moved, they push the unneeded paint in the line in front of them.

" This was developed 25 years ago by the founders of LacTec," he says. "They wanted to reduce the cleaning cycle of a color change."

The operator of the system can load the amount of paint needed for a particular job. The pigs, when they are used to push the unneeded paint back to the storage system, can leave the hose 95 percent clean. The result is that where flushing if a full piping system can take up to a working day, a piggable system can clean up in 25 minutes.

"So, you reduce the amount of paint you use," Menzel says, "and second, you cut the amount of material you need to flush out the line.

"Custom colors can be very cost-intensive. You don't want to have to waste 50 gallons of paint if someone needs three or four trucks painted."

He cites one customer, who needed just 20 gallons of a paint. When it was time to clean the line, only to gallons were lost in flushing. So, the price of the job came down, and there was very little waste to handle.

Also, with smaller jobs it is not necessary to fill a full circulation line. Paint can be restricted to just one part of it.

"We have three different diameters of pigs, all made of EDPM rubber," Menzel says. "The pig is pushed by compressed air, with the paint remaining almost entirely between the two pigs. Each pig has a magnet inside, so we can detect exactly where it is in the line by means of a sensing system."

The LacTec piggable paint system is now available in North America.

This technology, he adds, was not available commercially in North America before. However, it is proven, and Europe has had it for two decades.

LacTec was founded by a group of engineers in 1986. It also offers electrostatic processing of waterborne paints, as well as the piggable system.

AkzoNobel Buys BASF Coatings Business

AkzoNobel has finalized the acquisition of BASF's global Industrial Coatings business, which supplies a range of products for industries including

Biederman Packaging Inc. is a seasoned contract packaging and toll manufacturing company, based in Dundas, ON. The company has a long history of providing cost-effective contract manufacturing and packaging services, with a specialty in formulating and packaging powder products.

Partnering with the experienced team at Biederman allows more choices, more ideas, and more solutions for dry and specialty chemical toll packaging, as well as outsourcing requirements. The company is proud to offer a variety of contract packaging services to all industries, complete with product packaging options such as repackaging, private label creation and much more.

Biederman Packaging can formulate, package or repackage a wide variety of granular and powdered products. It offers the ability to fill many sized containers, from small bottles to pouches, pails and even drums, ranging from 25 grams to 1000 kilograms. It is set up to handle awkward jobs that other packagers prefer not to handle, because of the challenges involved in handling the products or the necessary style of packaging.

Further, Biederman sets out to partner with clients by providing assistance from the design phase through market introduction to full production. Biederman's years of manufacturing experience mean the management team can help any client with ideas, enhancements, revisions, packaging design, labeling, formulations and more.

To maintain the highest standards of quality control in the development of products, the in-house lab and quality assurance expertise ensures that standards are met and any required monitoring and reporting is completed to a customer's satisfaction. Equipment available includes:

- Various Size Ribbon Mixers
- Micro Pulverizing & Grinding Equipment
- Shrink Packaging Equipment
- Small Size Extrusion Equipment
- Valve Bag Fillers
- Form and Fill Machines
- Container Label Applicators
- And More!

From bulk filling and repackaging services to screen printing, labeling and proximity warehousing, Biederman also performs manual assemblies and other services that include, but are not limited to:

- Custom Shrink Packaging
- Container Labeling
- Sleeving
- Blister Packaging
- Hand Packing
- Custom Product Formulation
- Thermal Printer Label & Product Bar Code Creation
- Counting & Sorting
- Product Pricing
- Compounding

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PCI's POWDER COATING 2017 Technical Conference Returns to Indianapolis

The Powder Coating Institute (PCI) will host its POWDER COATING 2017 Technical Conference from March 27-31, at the JW Marriott in downtown Indianapolis, Indiana. Long known as the event where the industry gathers to discuss all things powder coating, PCI is devoting an entire week to powder coating education, hands-on training, tabletop exhibits and networking with industry peers.

The event begins with PCI's popular Powder Coating 101: Basic Essentials Workshop, offered Monday and Tuesday, March 27 & 28. The workshop includes classroom instruction based on PCI's Powder Coating: The Complete Finisher's Handbook, an evening reception where attendees can interact with workshop presenters & other attendees, and a trip to PPG Industries' powder facility to experience hands-on demonstrations.

The technical conference sessions take place on Wednesday and Thursday, March 29 & 30, with general sessions each morning, followed by more than 15 breakout sessions. There will be a tabletop exhibition with a reception the first evening, along with hospitality salons sponsored by PCI members. This event offers the perfect balance of education and networking for all powder coating professionals.

To round out the week of powder coating events, PCI will conduct its Custom Coater Forum on Thursday and Friday, March 30 & 31. The program is created based on the needs of our Custom Coater members. The forum allows for valuable interaction among custom coaters while they pick up plenty of great tips and information that can positively impact their business.

Don't miss this great opportunity to learn from the best in the powder coating industry. Representatives from manufacturing OEMs and custom coaters who apply powder coating and other industrial finishes will be attending this five-day event. PCI Members receive a discount on registration fees, and early bird pricing for the Technical Conference and Custom Coater Forum will be in effect until February 27. For more details on conference sessions and registration, and for the most up-to-date list of tabletop exhibitors, visit powdercoating.org/PowderCoating2017.

EVENT DETAILS

Location

JW Marriott Indianapolis
10 S West St, Indianapolis, IN 46204

Dates

March 27-31, 2017

Events

March 27 & 28:
Powder Coating 101 Workshop

March 29 & 30:
Technical Conference and Tabletop Exhibition

March 30 & 31:
PCI Custom Coater Forum

Event Website

powdercoating.org/PowderCoating2017

Check the event website regularly for new exhibitors, sponsors and updated registration details.

Hotels

To make reservations, go to the event website and click on HOTEL & TRAVEL.

JW Marriott Indianapolis
$199/night + tax

Fairfield Inn and Suites Indianapolis Downtown
$149/night + tax

The hotel cutoff date for reservations at our discounted rates is Feb. 27, 2017.

Register

powdercoating.org/PowderCoating2017

Tabletop Exhibitors (as of January 4, 2017)

Aal Chem
ACT Test Panels
BCI Surface Technologies, Bulk Chemicals, Inc.
Blasdel Enterprises, Inc.
Caplugs
Canadian Finishing & Coatings Magazine
Carlisle Fluid Technologies
Chemical Coaters Association Int'l
Chemetall US, Inc.
Col-Met Engineered Finishing Solutions
Coral Chemical Co.
DeFelsko Corporation
DuBois Chemicals
Eisenmann
Elcometer
Engineered Finishing Systems
EPSI – Engineered Products & Services, Inc.
Fischer Technology, Inc.
Fostoria Process Equipment
Gema
General Fabrications Corporation
George Koch Sons, LLC
IGP North America LLC
IntelliFinishing
Keyland Polymer
Lewellyn Technology
Midwest Finishing Systems
Nordson Corporation
Parker Ionics
Pneu-Mech Systems Mfg. Inc.
Powder Coating Institute
PPG
Products Finishing
Rohner
RollSeal
The Sherwin-Williams Co.
Therma-Tron-X, Inc.
Vogel Industrial Coatings

Companies in bold are members of the Powder Coating Institute

Powder Coating 2017 Technical Conference

Schedule of Events

MONDAY, MARCH 27 – TUESDAY, MARCH 28
POWDER COATING 101 Workshop

WEDNESDAY, MARCH 29 – THURSDAY, MARCH 30
POWDER COATING 2017 Technical Conference & Tabletop Exhibition

THURSDAY, MARCH 30 (evening) – FRIDAY, MARCH 31
PCI Custom Coater Forum

For a detailed schedule of events, visit www.powdercoating.org/PowderCoating2017

Technical Conference Sessions

Wednesday, March 29 | 8:00 AM

GENERAL SESSION

The TRUTH about Leadership!

Wednesday, March 29 | 9:30: 11:30 AM

1. POWDER COATING BASICS

Powder Coating Basics - Critical Components of an Effective Powder System

2. LOW-CURE POWDER COATING

Ultra-Low Bake Coatings for Solid Wood and MDF, Clear Coat: Advancements for Powder Coatings

UV Curable Powder Coating - The Application and Curing Process, and Its Advantages

Powder Coating MDF

Thermally Cured Powder Coatings for Heat Sensitive Substrates

3. POWDER COATING FORMULATIONS

Post-Addible Powder Coating Additive Technology

Value Added FEVE Powder Coating Formulations for High Performance Applications

Flexible Superdurable Powder Coatings System

Development of Clear, VOC-Free Static Dissipative Coating for Non-Conductive Substrates Enabling Them to be Powder Coated

Wednesday, March 29 | 1:30 – 3:00 PM

4. ALL ABOUT OVENS

Selecting the Right Oven

Catalytic Infrared - What is it, How it Works, When to Use it

Curing Complex Parts

Wednesday, March 29 | 1:30 – 3:00 PM (continued)

5. APPLICATION EQUIPMENT

Hunting Down and Eliminating Hidden Costs in your Powder Coating Operations

When is the Right Time to Upgrade Your Older Application Equipment?

6. POWDER COATING CASE STUDIES

Powder Coating Sublimation & Decoration with Trojan Powder Coating

Bicycle Manufacturing Gears Up with Powder Coating

Wednesday, March 29 | 3:15 – 4:45 PM

7. ROUNDTABLE DISCUSSIONS

Chat with other attendees about a wide variety of topics to exchange thoughts and ideas about powder coating operations.

8. FAST COLOR CHANGE

High Speed Color Change, Facts and Myths

Quick Color Change Success and Failures

9. YOUR COMPANY'S FUTURE

Mentoring: Growing your Business One Employee at a Time

Training for Keeps: A Return on Your Investment

Effective Customer Service

Thursday, March 30 | 8:00 – 9:30 AM

GENERAL SESSION

The Evolution of Powder Coating Technology

Managing the Regulatory World of Powder Coatings

The Elements of an Effective Dust Hazards Analysis (DHA)

Thursday, March 30 | 9:45 – 11:45 AM

10. ULTIMATE POWDER COATING

Ultimate Powder Coating: An Advanced Powder Session

Thursday, March 30 | 9:45 – 11:45 AM (continued)

11. THE BUSINESS OF POWDER COATING

The Cost of (Poor) Quality

Customers' Expectations for System Install

Delivering the "Guarantee" - Customer Service

12. POWDER COATING MATERIALS

Scratch Resistance and Robust Surfaces: Advancements for Powder Coatings

Durable and Ultradurable Coatings for Wire Goods and Complex Metal Parts

Metallic Powders - They Don't Have to be the Biggest Pain in the $#%*&

Thursday, March 30 | 1:15 – 2:45 PM

13. PRETREATMENT

Eliminating Phosphorus from Your Pretreatment Process

Why Change My Pretreatment From an Iron Phosphate to a Phosphate-free or Zirconium Process

Effectively Manage Transitions from Conventional Phosphates to Advanced "Phosphorus-Free" Pretreatment Technologies!

14. POWDER COATING BEST PRACTICES

Quality Air - the Foundation to Flawless Coatings

Accuracy, Efficiency and other Technology Advancements for Common and Complex Coating Thickness Measurement Applications

Be Nice to Mother Earth! Remove Oils & Soils from Your Wastewater; Recycle Your Aqueous Cleaning Solutions

15. SYSTEM DESIGN

Future of Finishing – Designing your Powder Coating System for the Unknown

Understanding and Controlling Your Powder System's Operational Costs

Dynamix Celebrates 10th Anniversary

Dynamix Inc. (Markham, ON) celebrated the company's 10th anniversary on November 26. The chemical specialties supplier and formulator, which has grown from a modest start to have over 15 employees, celebrated with a corporate event at Toronto's Distillery District, followed by a gathering with 65 guests in a gondola at the Air Canada Centre, for a Toronto Maple Leafs hockey game. The event included dinner and cocktails for all.

"Our company has countless achievements and accomplishments, especially from last year which proved to be exceptionally productive for our company," said Dynamix spokesman Stewart Tymchuk. "We are grateful to our clients, suppliers and customers who trusted in us to help them provide immaculate service and products. Their demands, challenges and feedback have pushed us to go ahead and improve vigorously. Our success story remains incomplete without them."

Dennis Rogers, Charles Morris and Stewart Tymchuk at the Air Canada Centre.

Albermarle CEO Luke Kissam.

construction, domestic appliances, wind energy and commercial transport. This, AkzoNobel says, strengthens its position as the global number one supplier in coil coatings.

The transaction includes relevant technologies, patents and trademarks, as well as two manufacturing plants in the UK and South Africa. Approximately 400 employees from BASF's Industrial Coatings business join AkzoNobel.

Completing this transaction also positions AkzoNobel as a full service coatings provider for the protection and maintenance of wind turbines. The transaction is based on a deal value of €475-million, with BASF's Industrial Coatings business generating revenue close to €300-million in 2015. During the next two years, a portion of the BASF production volume will be transferred to existing nearby AkzoNobel manufacturing facilities. The full profitability of the acquisition is to be realized by the end of 2018, in line with the stated financial guidance from AkzoNobel for its existing Performance Coatings business.

"We are pleased to welcome our new colleagues to AkzoNobel," said Conrad Keijzer, the company's executive committee member responsible for Performance Coatings. "This business is an excellent strategic fit and will strengthen our leading market positions, particularly in the coil, protective and wood coatings sectors in Europe. We will be able to offer new products and maintenance solutions – such as protective coatings for wind turbine blades – and service a broader customer base to drive growth."

Albemarle Completes Chemetall Purchase

Albermarle Corp. has announced successful completion of the previously declared sale of its Chemetall Surface Treatment business and related assets to BASF, for proceeds of approximately US $3.2-billion. The price is subject to typical adjustments with respect to certain pension liabilities, cash, working capital and indebtedness.

Luke Kissam, chairman, president and CEO, stated, "We are very pleased to complete this transaction, which will accelerate our transformation into a company focused on powering increased energy efficiency around the world through our leading lithium and refinery catalysts businesses. We appreciate the contribution that the Chemetall Surface Treatment team has made to Albemarle over the last two years. We are certain that BASF will be an excellent steward of this outstanding business."

Albemarle Corp., headquartered in Charlotte, NC, is a global specialty chemicals company with leading positions in lithium, bromine and refining catalysts. It employs approximately 4,100 people and serves customers in about 100 countries.

Troy Corp. Opens Tech Center

Troy Corp. has unveiled its state-of-the-art Science & Technology Center at the company's global headquarters in Florham Park, NJ. It includes technologically advanced microbiology and product development centers, as well as personal care, analytical services, and additives formulations laboratories. The Center includes numerous offices, work stations, an algae room, a mold/mildew room, an autoclave, and a negative pressure lab.

"The new center is an impressive home for several of Troy's scientific teams, and reflects not only the company's dedication to new product development and technical service, but also its leadership position in the industry," says Dr. Izzy Colon, vice-president, R&D and technology. "Troy has made a significant capital investment in its future with the construction of the Science & Technology Center, which will benefit Troy customers for years to come."

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

Masking Solutions

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

Masking Tapes

We stock high temperature resistant (green and blue) polyester, amber polyimide, fiberglass cloth and crepe paper masking tape in logs that we can cut to whatever roll width you require on our high speed tape slitters. Most of the popular cut widths of tape are already in stock ready for immediate delivery. Our two types of sandblasting tape are much more efficient and durable at masking off parts during sandblasting with no residue than the commonly used duct tape.

We stock the most popular diameters of masking discs ideal for masking off holes or grounding areas around holes. These high temperature masking discs remove cleanly from surfaces without leaving any residue behind. We are able to manufacture in-house on our high speed die-cutter virtually any shape or kit of tape masking as per our customer needs.

Custom Masking

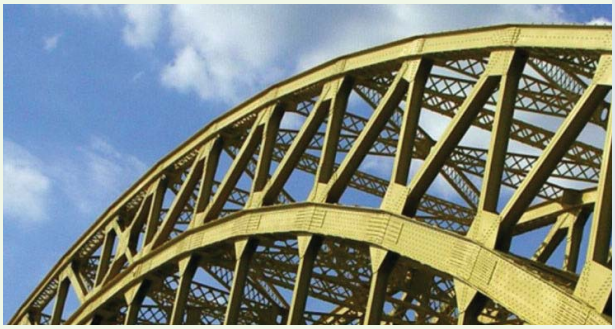
Our sales team is focused on finding solutions for our customers. If the required mask does not exist in our standard product line, we can design, prototype and produce the correct part. We can prototype custom designed prototypes in-house within 2-3 days on our 3D printer to create a simulated parts in the required durometer for fit/function analysis by the customer. Although these 3D printed prototypes can not be coated and baked, a careful analysis of the part fit will tell whether the part design will work satisfactory or design changes are required.

Once the design has been approved we can stock these custom parts for you and ship as required. Caps'n Plugs strives to find the best and most economical solution for our customers.

Dunn-Edwards to Merge with Nippon Paint Holdings

Dunn-Edwards Corp., one of the US' largest independent manufacturers of architectural, industrial and high-performance paints, has agreed to a merger agreement with Nippon Paint Holdings Co., Ltd., the world's fourth-largest paint company, and with certain of its subsidiaries. Osaka, Japan-based Nippon Paint has $4.8-billion in annual sales.

It will maintain the Dunn-Edwards brand and its range of quality paints. The merger with Dunn-Edwards provides Nippon Paint with a platform for growth throughout the US.



Nippon Paint makes architectural coatings, and also paints for applications such as this bridge.

"This is an extraordinary opportunity for both companies," said Karl Altergott, CEO of the Los Angeles-based Dunn-Edwards. "We will continue business as usual as Dunn-Edwards, producing our superior paint and maintaining our culture that we've embraced for 91 years. Plus, we'll have an influx of resources, new coatings technology and an opportunity to grow with a financially strong global leader."

Nippon Paint's president and CEO Tetsushi Tado said, "We've wanted to expand our architectural paints in the US and have been searching for the right partner. It is important to us that Dunn-Edwards is the most environmentally responsible paint manufacturer, which fits with our mission. They are respected by both painting contractors and designers as a top choice. We enjoy the same reputation throughout Asia, so it's an ideal fit."

Nippon Paint Holdings, established in 1881, operates more than 30 manufacturing plants throughout Asia, producing over one-million tons of paint and coatings annually. Founded in Los Angeles, Dunn-Edwards has its roots in the US southwest, operating 130 stores along with over 80 authorized dealers. It produces its coatings in a LEED Gold-certified manufacturing plant.

EXEL becomes SAMES KREMLIN

EXEL North America has changed its name to SAMES Kremlin. After many years of working together in the same group, Kremlin Rexson and SAMES have decided to increase their synergies by merging within the EXEL Industries Group.

There have been no changes to the office location, staff or management. However, the company website has been redesigned, and the corporate logo has been redesigned.

The company makes a range of powder and paint spray systems.

ORCO Buys Eastern Color & Chemical

Organic Dyes & Pigments LLC has acquired the assets of Eastern Color & Chemical Co. of Providence, RI, effective January 4. Established in 1928, Eastern has a long history of supplying organic pigment dispersions and specialty chemicals to the textile, paper, plastic and leather industries.

"We warmly welcome Eastern Color & Chemical Co. and their customers and employees to the ORCO family," said John D'Amelio, president of ORCO. "This acquisition strengthens ORCO's presence in key markets and positions us for future growth."

Organic Dyes and Pigments is a colorant solution provider offering a broad range of dyes, pigments and specialty chemicals used in a diverse base of industries including textiles, coatings, agricultural products, construction materials, HI&I and many others. The company is headquartered in E. Providence, RI, with additional locations in Concord, NC and Shanghai, China.

PPG Announces Cost-Reducing Changes

The board of directors of PPG has approved broad restructuring actions to reduce the company's global cost structure. The actions are focused on certain regions and end-use markets where business conditions are weakest, and they are targeting structural reductions in operating, functional and administrative costs.

"Because of continued slow overall growth in global demand, we are taking decisive action to adjust our cost structure," said Michael H. McGarry, PPG chairman and chief executive officer. "These measures will better align our resources with anticipated ongoing business conditions and will keep PPG competitive in the end-markets in which we participate. Even with this broad effort to reduce our total costs, we remain committed to continued investment in growth-related initiatives and in geographies with continued growth potential."

PPG will record a pretax restructuring charge of $190-million to $200-million, or 53–58 cents per diluted share, in the fourth quarter 2016, of which approximately $140-million represents cash costs and $50-million to $60-million is related to the write-down of certain assets and other non-cash costs. Of the approximately $140-million total cash outlay, about $110-million is expected in 2017, with the balance to occur in 2018. In addition to the aforementioned pretax charge and cash costs, approximately $15-million of incremental restructuring-related cash costs are expected during 2017, for certain items that are required to be expensed on an as-incurred basis.

When these moves are completed, the company expects the restructuring to generate $120-million to $130-million in annual savings, with $40-million to $50-million of savings projected to be realized in 2017 and the remainder of the expected annual savings to be substantially realized by year-end 2018.

Chinacoat 2016 Matched Previous Years

Chinacoat 2016 (the 21st China International Exhibition for Coatings, Printing Inks and Adhesives) ended December 2. Chinacoat alternates annually between Guangzhou and Shanghai. This year's event, held in Guangzhou, was comprised of more than 1,000 exhibitors from 30 countries displaying their new products and innovations on a gross exhibit area of more than 64,000 square meters in six exhibit zones.

Meeting Mixing and Blending Needs for more than Half a Century

Conn and Company headquartered in Warren, PA, USA, has been designing and manufacturing industrial mixing equipment for over 60 years.

Conn builds equipment to meet the customer's requirements with air or electric drive specifications to suit operating conditions; horsepower to suit service conditions; dimensional design to suit operating conditions or existing tanks. The company firmly believes in keeping it simple, durable and functional.

Conn provides low shear blending blades or high shear dispersion blades or complete drive assemblies for processing fluid materials such as paints, adhesives, inks, cements, urethane foams, chemicals, slurries, grouts and more.

The Conn Blades®

Conn and Company recognized the need for blending blades and dispersion blades that provided true pumping action instead of plowing action. The company has brought four patented blades to the market under the trade name Conn Blade®.

The ITT style blade has a combination of louvers and teeth. It is a high pumping high shear dispersion blade and is the most efficient and aggressive dispersion blade available.

The IT style has the louvers providing superior pumping action, but without the teeth. It is a high pumping, low shear, blending blade and is excellent for mixing micro spheres or flakes or other fillers that need to be well mixed, but not destroyed.

The ITC CONN Blade® is an 8-vane open style blade providing excellent material flow, with more shear than the IT, but is not as aggressive as the ITT.

The patented P-ITT CONN Blade® is of UHMW Polyethylene and is excellent for highly corrosive or highly abrasive mixing. The P-ITT CONN Blade® is the most efficient and aggressive polyethylene blade available.

The Conn blades are available from 2" diameter to 48" diameter with mounting holes or mounting hubs to retrofit and upgrade a customer's existing equipment. Split construction is available for entry through manways. Conn also manufactures complete units and drive assemblies to mount on your tanks. Conn supplies air or electric utility/laboratory mixers, spool-type top entry for flange mounting to the customer's tank, and drive assemblies for mounting on bridge support for open top tanks. Conn and Company just needs the customer's requirements and will be happy to be of assistance.

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

Contact Richard C. Freeman at
rcfreeman@connblade.com,
call 814-723-7980 or fax 814-723-8502.
Web site: www.connblade.com

Preliminary show statistics from Chinacoat organizer, Sinostar, indicate 14.5 percent growth in visitors compared to the last Guangzhou show in 2014. Domestic China attendees for 2016 were 26,091 compared to 22,383 in 2014.

Overseas visitors numbered 4,761 compared to 4,6454 for 2014 and the total combined visitors was 30,852 compared to 27,028 for 2014. According to Sinostar, despite the general economic downturn in China, the number of exhibitors in 2016 remained steady when compared to the last two Chinacoats. There were a total of 1,070 exhibitors comprised of 775 from domestic China, 47 from Hong Kong and Taiwan regions and 248 from overseas.

This year's Chinacoat Conference also exhibited positive growth. The number of delegates to the conference almost doubled compared to the previous events. This year's theme, "Exploring the Novel Cutting-Edge Coatings Technology" featured 12 presentations. The total number of registered delegates was 115, comprised of 84 from domestic China, 2 from Hong Kong and Taiwan regions and 29 from overseas. Workshops had a total of 46 delegates and the 42 technical sessions had a total of 3,152 delegates.

DVUV Reorganizes as Keyland Polymer Material Sciences

DVUV Holdings, LLC has announced its new corporate name and a reorganization and rebranding of its operating companies. The new corporate name is Keyland Polymer Material Sciences, LLC.

The new holding company will include four separate operating companies: Keyland Polymer UV Application Technology, LLC; Keyland Polymer UV Resins, Ltd.; Keyland Polymer UV Powder, LLC; and DVUV, LLC.

This new alignment aims to solidify the company's position as a global developer, formulator, manufacturer, and applicator of UV-curable solid material used in graphic arts, 3D printing, UV-cured powder coatings, and other forms of UV-cured solid materials.

Michael Knoblauch, president of Keyland Polymer Material Sciences, LLC said, "We are excited for the future of Keyland Polymer Material Sciences and UV and radiation cured solid materials. We are now able market a complete product and service portfolio; basic material development, resins, finished products, application and curing technologies."

Keyland Polymer UV Application Technology, LLC offers UV/EB curing solutions of solid materials used in coatings, 3D/additive materials, and other product applications. The focus of this business is materials applied and cured with UV LED lamp technology.

Keyland Polymer UV Resins, LTD develops, produces, and sells solid polyester, epoxy, and other resin based products used in UV-cured solid materials. Markets for UV solid resins include powder coatings, graphic arts, and 3D/additive manufacturing.

Keyland Polymer UV Powder, LLC, formerly known as Keyland Polymer, LLC combines Keyland Polymer's UV resins with additives, pigments and photoinitiators to produce custom and performance specific UV-curable powder coatings for a variety of substrates including wood, plastic, composites, and ferrous and non-ferrous metals. The product is marketed under the brand name UVMax.

DVUV, LLC produces and sells powder coated MDF wood components using Keyland Polymer's UV powder to the retail, healthcare, hospitality, education and office furniture industries. DVUV's UV powder line has been operating in Cleveland, OH, since 2005.

Team Develops Scratch-Resistant Coating

Researchers from three continents have developed a thin, scratch-resistant coating that they claim can be easily created in any color without use of pigments. The team was led by Harvard University's Henning Galinski and includes researchers from King Abdullah University of Science and Technology (Saudi Arabia) and ETH Zurich (Switzerland).

The concept is based on structural coloration. This is a phenomenon seen in bird feathers, such as those of a peacock, or the wings of butterflies, whereby biological nanostructures allow seemingly colorless materials to reflect light in ways that create a colorful appearance. The research team says it's a major step toward scalable versions of the technology, which could have applications from buildings to cars and airplanes.

The new development involves spraying a platinum-aluminum alloy onto the substrate, then 'de-alloying,' or removing most of the aluminum, and ultimately combining "de-alloyed subwavelength structures at the nanoscale with loss-less, ultra-thin dielectrics coatings."

The coating begins as transparent. Then, an ultra-thin layer of sapphire is infused into the coating. Sapphire is an especially hard mineral, already used in glass to make scratch-resistant windows and screens for electronics. The sapphire lends hardness and abrasion-resistance to the coated surface, and also engenders the color-shifting abilities of the coating.

The thickness of the sapphire determines the color the coating takes on, because the sapphire particles fill nanopores in the coating in different ways at different thicknesses. Changing the thickness of the layer at the nano scale can generate any desired color, and because the coloration is part of the material structure, it won't fade.

Unlike recent developments in coatings that can change color on demand, the coating isn't ever-changing. It can, however, be tailored to any color needed, without pigments or additives. The color is 'programmed' into the coating as it is applied, meaning one batch of coating material could create any number of colors using the same process.

Because the coating is thin, durable and can produce any color on demand, it could be used for architectural applications and beyond. The researchers say the technology could find a place in the automotive recoat industry, or even aerospace coatings.

PCI and Gema Seek Scholarship Applicants

The Powder Coating Institute (PCI) and its corporate Diamond member, Gema USA Inc., are soliciting applications for the 2017-18 Gema/PCI Scholarship. To qualify, a candidate must be a full-time undergraduate or graduate student studying engineering in an accredited college or university program. Special consideration will be given to applicants that demonstrate an interest in powder coatings and are pursuing disciplines aligned with a career in manufacturing, mechanical or electrical engineering.

Candidates must submit a completed Gema/PCI Scholarship Application Form by March 1. Application forms can be submitted online at the URL given below, or printed and emailed directly to the PCI Future Technology committee chairman, Kevin Biller at kevinbiller@yahoo.com. Application submissions must include a letter of recommendation from a faculty member or advisor.

At the discretion of the selection committee, one US$5,000 Gema/PCI Scholarship or two $2,500 Gema/PCI Scholarships may be awarded. Scholarship award winner(s) will be notified by

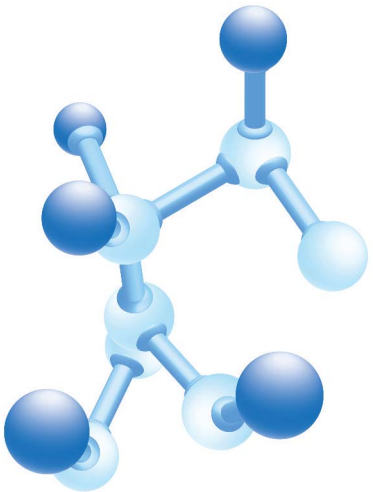
In a highly competitive market where setting yourself apart from your competition can be a challenge, Northspec Chemicals Corp. continues to provide diverse, innovative, high performance specialty chemical solutions to the Coatings, Construction, Adhesives, Composites, Plastics and Rubber industries.

Founded in 2001 in true entrepreneurial spirit, Northspec Chemicals Corp. represents many globally renowned industry leading suppliers including AkzoNobel, Arkema, Avebe, Brilliant, The Chemours Company, Chromaflo Technologies, Dow Construction Chemicals, Eternal Chemicals, Evonik Industries, Huntsman Pigments, Invista, JECO, Kukdo Chemicals, Onichem, Pflaumer Brothers, Synthomer, Wanhua as well as other complimentary manufacturers of additives, pigments, resins and other specialty products.

Northspec Chemicals Corp., known as one of the industry's strongest leaders in technical sales and commercialization capability, offers value-added solutions for both the current and future needs of their customers and supplier-partners alike.

With coast-to-coast logistics and sales coverage, Northspec Chemicals Corp. has a strong focus on providing the highest quality products available, to meet and exceed the demands of the Canadian marketplace.

A company with the right attitude, Northspec Chemicals Corp. is a member of CACD, TRFA, and CSSA and adheres to the codes of Responsible Distribution, providing strong product stewardship and reliability.



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Do Consumers Prefer Neutral Colors?

PPG has released its annual automotive color popularity data, which reveals consumers again preferred cars with a neutral color. More than 75 percent of 2016 vehicles built globally were white, black, gray or silver.

White remained the most popular global vehicle color at 38 percent, up from 35 percent last year. Black (16 percent), silver (12 percent) and gray (10 percent) rounded out the top automotive colors worldwide. And although PPG research found that nearly 60 percent of US and European consumers identified color as a major factor in their vehicle-buying decisions, the popularity of blue, green, natural and red vehicles remained unchanged from last year.

In North America, white (25 percent) eclipsed black and silver (tied at 19 percent), gray (12 percent), and red and blue (tied at 10 percent). In South America, white (37 percent) was close to the global popularity level, with silver (29 percent) a strong second. Black (12 percent), gray (10 percent) and red (8 percent) rounded out out the top five.

In Europe, white (33 percent) was followed by gray (18 percent), black (16 percent), silver (10 percent), blue (8 percent), and natural and red (tied at 7 percent). And in the Asia-Pacific region, white (47 percent) led by a larger margin than in any other region, while black (14 percent), natural (11 percent), silver (10 percent) and red (7 percent) trailed.

"Although white dominates vehicle color globally, there is more variety in color preferences by market and vehicle type," said Jane Harrington, PPG manager, color styling, automotive original equipment manufacturer (OEM) coatings. "For example, in North America, silver is the leading color for compact vehicles, while black is preferred for sports cars. Metallic colors are popular with American and European men, while women from those markets prefer pearlescent effects on their cars.

"These differences underscore the importance of working with our automotive customers to develop distinctive colors and effects that will appeal to a brand's targeted buyer in a specific market," she said.

Looking ahead to the 2017-2018 model years, Harrington said PPG is seeing an increase in blue. "For instance, in our 2016 data, blue increased by 3 percent on luxury, midsize and compact cars. Also, blue was very noticeable the last three years at the North American International Auto Show in Detroit.

Concept vehicles and new model reveals included the Porsche 911 Targa in Saphirblau in 2014, and the Ford GT Super Car, Mustang, Fusion and Focus in a striking layered blue in 2015. And at the 2016 show, the Buick Avista concept vehicle captured the EyesOn Design award, using a deep sapphire blue.

"Blue is a very versatile color for the automotive market, because subtle shifts in hue, chroma and flake appearance of a blue coating can do a lot to enhance a vehicle's style or distinguish a brand," Harrington added.

PPG's Kulture collection for 2020 automotive models includes 70 new colors across four trend palettes. 'Hour Glass.' the company says, evokes nostalgia for classic design but is refocused for the contemporary world. It consists of heritage colors such as royal blues, olive greens, refined browns and traditional reds.

A silver Audi A4. Customers still prefer this look to brighter colors.

'ES/Sense' reflects the idea that "less is more," where simple, pure design and living in the moment are key. The pastel and ceramic hues in varying degrees of saturation suggest a reaction against overexposure to social media and technology.

'IMpower' represents a response to new ways of thinking, PPG sys, as well as new codes for design. It is a balance of extremely chromatic colors and complex subdued tones.

And 'Biocentric' aims to unify the pursuit of an organic lifestyle with the emerging trend of space exploration. It offers a palette of nature-inspired hues with what PPG calls "deep galactic tones."

To compile its findings, PPG engages a global network of more than 20 color experts with a focus on automotive, architectural, aerospace and consumer-products markets. These specialists analyze design trends, consumer preferences and priorities across regional, cultural and global markets.

Venjakob – Custom Solutions for Your Product Finishing

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

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

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

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

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

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

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

Environment

For decades Venjakob has lived the motto: environmentally friendly – economical – reliable. Venjakob does this not only in the design of machines. Our DIN EN ISO 9001 and 14001 certificates document our high-quality and reliable performance.

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

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

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

March 17 and will be recognized on March 29 at the PCI Technical Conference in Indianapolis. Scholarship winners are asked to provide a brief follow-up summary of educational experiences during the 2017-2018 academic year.

The PCI's Future Technology Committee administers the Scholarship Request Program and works with the PCI executive director and staff to promote and solicit scholarship applications from students and educational institutions. The Scholarship Selection Sub-Committee awards scholarships based on the following criteria, established and approved by the PCI board of directors:

Comprehensiveness of college/university program; specific studies and projects related to powder coatings; future goals; uniqueness of applicant's qualifications, goals and aspirations; and a letter of recommendation.

Sartomer Releases Technical Guide

Sartomer Americas, a business unit of Arkema Inc., has released a booklet called Coatings Concepts. This free technical booklet contains six articles by industry experts to help compounders enhance their coatings formulations to advance performance in a wide variety of applications. It contains information on the Economics of UV Curing; Radiation-Curable Components and Their Use in Hard, Scratch-Resistant Coating Applications; the Influence of Various Matting Agents on Abrasion-Resistant UV-Cured Coatings; New UV PUDs Significantly Enhance Performance of Waterborne UV-Curable Coatings; One Hundred Percent Solids, Low Temperature Cure Epoxy Coatings; the Versatility of Peroxide Curing; and, How Does it Feel? Recent Advances in UV-Curable Soft Touch Coatings.

Those interested can examine the booklet, and find other technical information, at: www.americas.sartomer.com

Axalta Buys Ellis Paint

Axalta Coating Systems has acquired Ellis Paint Co., which manufactures industrial and automotive refinish paint in North America. Financial terms of the transaction were not disclosed.

Founded in 1887 and based in Los Angeles, Ellis Paint Co. is a manufacturer and distributor of coating products suited for substrates including steel, concrete and wood, shipping vessels and construction equipment, as well as indoor and outdoor furnishings and fittings. Company products include the Hy-Lux line of multi-purpose coatings, the Shaft-Lac line of solventborne coatings, the Maximus line of low VOC industrial maintenance coatings, and the Engard line of heavy-duty industrial coatings. The automotive segment of Ellis, Pacific Coast Lacquer, developed Poly-Primer, a legacy product which was the original solution to high VOC lacquer primer in the evolution of low VOC coatings in the automotive industry.

"We are excited to have the extensive range of high quality Ellis Paint Company brands join Axalta's portfolio of products," said Michael Cash, Axalta senior vice-president and president, Industrial Coatings. "Ellis Paint's commitment to providing innovative and sustainable coatings is renowned in the industry and will align well with our focus on technology and business strategy. We are committed to the continued support of Ellis Paint's current customers and look forward to leveraging Axalta's market strength to extend the reach of Ellis Paint's fine brands to new customers."

Saudi Aramco Acquires Converge Line

Saudi Aramco has acquired the Converge product line and associated operations and technologies from US-based Novomer Inc. The transaction was valued at up to US$100-million.

Converge is manufactured from, and contains a significant portion of, carbon-dioxide. The technology, according to the company, provides a high-performance, cost-competitive and more sustainable alternative to conventional petroleum-based polyols used in coatings, adhesive, sealant, and elastomer (CASE) applications. These cover a broad spectrum from automobile seats to building insulation panels.

Amin H. Nasser, Saudi Aramco president & CEO said, "Some of Saudi Aramco's most significant achievements in recent years have been in developing new international partnerships in the downstream space. There is compelling industrial logic to the Converge polyol technology deal as it enables the conversion of waste CO2 into cleaner, high-value end-products with significant performance, cost and carbon footprint improvements. The deal also enables the development of new technological growth areas in line with Saudi Vision 2030 objectives of economic diversification and job creation."

Abdulaziz Al-Judaimi, acting senior vice-president of Downstream, Saudi Aramco, added: "The acquisition of the Converge technology reflects the success of Saudi Aramco's efforts to continuously seek the best possible opportunity for the commercialization of specific downstream technologies on a large-scale. This technology represents an excellent marriage of improved product quality and lower cost while achieving environmental benefits.

"By providing access to reliable feedstock supplies, financial stability and unrivalled R&D investment and focus, Saudi Aramco will accelerate the commercialization of these exciting new polyol materials. This will help spur growth in the production of more sustainable finished and semi-finished products in the petrochemicals conversion sector, including within the small and medium enterprise sector in Saudi Arabia."

Compared to conventional polyols, Converge polyols reportedly have approximately one-third the carbon footprint. When incorporated into polyurethane formulations, they demonstrate superior material performance including: increased strength; increased abrasion, chemical and weather resistance; increased adhesion, hardness and tear-strength; greater load bearing capacity; and reduced heat of combustion.

Saudi Aramco will manufacture and market Converge and associated products through its subsidiary, Aramco Performance Materials LLC (APM). Saudi Aramco is planning for full-scale production facilities in Saudi Arabia to support the manufacture of specialty and intermediate chemical products to supply a wide variety of industries.

Powder Coating Conference Coming in March

The Powder Coating Institute (PCI) will host the Powder Coating 2017 Technical Conference from March 27-31, at the JW Marriott hotel in downtown Indianapolis, IN. Long known as the event where the industry gathers to discuss everything related to powder coating, PCI is devoting an entire week to powder coating education, hands-on training, tabletop exhibits and networking with industry peers.

The event begins with the Powder Coating 101: Basic Essentials Workshop, offered Monday and Tuesday, March 27-28. The workshop includes classroom instruction based on PCI's Powder Coating: The Complete Finisher's Handbook, an evening reception where attendees can interact with workshop presenters and other attendees, and a trip to PPG Industries' powder facility to experience hands-on demonstrations.

1992 – 2017 CELEBRATING 25 YEARS

Superior Finishes Inc. is a manufacturer of liquid coatings, supplying the O.E.M. markets, selling business-to-business across Canada, into the U.S., and abroad. The company's history is one of family and is rooted in a long succession of Guertins in the paint business.

Ernest Guertin emigrated from Quebec to Winnipeg in 1906 in order to manage a paint company, by 1908 he had purchased that company, changed the name, and erected the still standing building on Hargrave Street. This was the beginning of the Guertin family's journey in the coatings business.

Today, Superior Finishes includes Guertins of the fourth generation in coatings manufacturing, with a fifth generation on the way. Having recently moved to a large manufacturing facility complete with a full-scale laboratory, Superior Finishes has the ability to manufacture over six trailer loads of paint daily, and are in the planning stages of acquiring new equipment, allowing production level to exceed eight trailer loads per day.

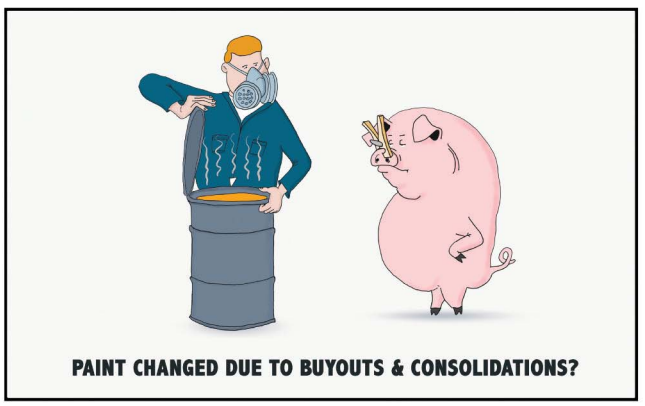
With an R & D laboratory that creates innovative products to solve today's and tomorrow's problems, Superior Finishes specializes in the formulation of coatings to suit customers' needs. With multiple warehouses across North America, their specially designed products are stocked nearby customers for ease of delivery.

Paying more for less seems to be the norm, Superior Finishes is the exception.

Liquid coatings such as:

SEQUOIA® COATINGS	Like the Sequoia tree, SEQUOIA® COATINGS pass the test of time
OPUS ™	The Forever Paint
Sequoia 100®	Newly developed, patent pending, Sequoia 100 ® is a solvent free, 100% volume solids coating

Solid technology. Superior Finishes.



JP Guertin, VP Marketing
jpg@superiorfinishesinc.com
204-291-2248

YOU ARE THE CUSTOMER. PUT US TO THE TEST. SUPERIOR FINISHES

The technical conference sessions take place on Wednesday and Thursday, March 29 and 30, with general sessions each morning, followed by more than 15 breakout sessions. There will be a tabletop exhibition featuring powder coating manufacturers, powder coating application equipment, system houses, chemical suppliers and the various services and suppliers that support the powder coating industry, along with hospitality salons sponsored by PCI members. This event offers a of education and networking for all powder coating professionals.

To round out the week of powder coating events, PCI will conduct its Custom Coater Forum on Thursday and Friday, March 30 and 31. The program is created based on the needs of custom coater members.

EPA Proposes Rulings on Methyl Products

The Environmental Protection Agency in the US is proposing bans or restrictions on the use of methylene chloride (dichloromethane) and n-methylpyrrolidone in paint removal products. This measure, announced on January 12, would affect their use in floor refinishing, graffiti removal, bridge repair, marine caraft refinishing and general paint and coatings applications.

Dangers the EPA notes with regard to methylene chloride include asphyxiation (causing death), liver toxicity, kidney toxicity, reproductive toxicity, and certain cancers. Some of these, the agency says, result from a very short, acute exposure; others follow years of occupational exposure.

For NMP, it says health effects include developmental toxicity (e.g., fetal death or decreased infant birth weight), neurotoxicity, immunotoxicity, liver and kidney toxicity and reproductive toxicity. The 277-page proposal on the chemicals calls for a prohibition on their manufacture, importing, processing, and distribution.

The agency also wants to restrict the sale of small-volume products and require companies to notify retailers and others in the supply chain regarding such prohibitions, the document notes.

Ab exemption is the chemicals' use in commercial furniture refinishing. The proposal does not cover this application at the present time. A 90-day comment period is now open.

Further, the EPA also published proposed rules on January 13 that aim to clarify how it will evaluate chemicals that may pose health and environmental risks, under the Frank R. Lauten-

NSP Promotes Water Pipe Coating

Longer-life coatings for potable water pipes are a goal for many contractors and municipalities.

NSP Specialty Products (Pinehurst, NC) has announced an exclusive distribution agreement for a new coating for potable water tanks and pipes that replaces its long-established NSP 120 product. Seeing, NSP says, a need to address modern problems in the water industry, it contacted Wolverine Coatings Corp., a formulator and manufacturer of heavy-duty, industrial c oatings and linings.

Wolverine developed LiquaTile 1172, a new coating and internal lining product that cost effectively protects drinking-water storage tanks at a time of tight budgets for infrastructure maintenance and expansion. Developed by the same research and development team behind Advanced Hybrid Cycloaliphatic (AHC) technology, LiquaTile 1172 is a fast-cure, low-odor, high durability tank lining solution that attains industry-leading water quality levels 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."

"NSP 120 has been the solvent-free industry standard potable water coating for many years," added Larry Harrison, president at NSP, 'but we wanted to push the boundaries with the latest technology. We had specific requirements and Wolverine was the natural choice to make these demands a reality.

"Having had a relationship with them for years, we felt very confident their innovative people wouldn't let us down. They didn't. They met every challenge, and then some.

"The ability to easily apply a low odor coating with 1172's performance, while raising the bar on clean water standards, is something the potable water market has not previously seen. We are excited about how LiquaTile 1172 will solve problems in the industry!"

LiquaTile 1172 is a 100 percent solids epoxy coating which is UL Water Quality certified to the US & Canadian NSF/ANSI 61 & NSF/ANSI Standard 372. It is certified for tanks 50 gallons and above, as well as for pipes 16 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.

Eisenmann USA provides systems for surface finishing, air pollution control, anaerobic digestion and process and high-temperature technologies. The company can plan, develop and implement high-quality plants, processes and services, and is well known for innovative and reliable technologies.

Eisenmann has had a presence in the US for 40 years, with over 1000 industrial systems installed to date. Based outside Chicago, IL, Eisenmann Corp. is a full-service solutions provider offering engineering, project management, procurement, project execution and commissioning, as well as after-sales support and comprehensive service packages. With headquarters in Böblingen, Germany, it boasts a global workforce of over 3,600 professionals.

Depending on the size of the workpieces, and the requirements of the customer, Eisenmann will provides tailor-made pretreatment plants for painting. Its range includes spray pretreatment plants, dip pretreatment plants, plants for painting plastics, and plants for dip coating.

Customized spray pretreatment plants can comprise cleaning stages (such as degreasing), rinsing stages, and film-forming procedures such as zinc phosphating and nano-layer deposition. Dip pretreatment plants are mainly made up of multiple dip basins. Hoists cycle the metal workpieces through the various bath media. This systems engineering technology is especially qualified for pretreating complex geometries.

Plastics easily acquire an electrostatic charge, and thus attract dust, which can cause rejects. Cleaning and pretreatment of plastic components is a fundamental prerequisite for good wetting and paint adhesion, and thus decisive for the successful coating of plastic components.

Eisenmann offers a range of space-saving conveyors for dip molding, having found success since 2000 with its PLC-based VarioShuttle dip coating systems. With the current Version 4, the company has increased system availability and integrated additional functions.

Additionally, Eisenmann has shown itself a reliable partner in the pretreatment and coating of aluminum, steel and non-ferrous metal strips. Its engineers use a broad range of plant types and combine proven modules with innovative systems, to form tailor-made solutions for customers.

The company has an established record in cleaning by using wet chemical methods. Parts with a normal degree of soiling are cleaned by means of alkaline spray degreasing, then rinsed with DI water. More heavily soiled parts are degreased in two stages at higher temperatures, and using higher spray pressures.

For further information, contact:
info.us@eisenmann.com
815 455-4100
www.eisenmann.us.com

berg Chemical Safety for the 21st Century Act, which updates the Toxic Substances Control Act.

Online Course in UV/EB Fundamentals

RadTech is launching an online course called UV/EB Chemistry Fundamentals. This free, email-based course features eight lessons sent in a weekly email that should take roughly 10 minutes to read. After the final lesson, RadTech will email a course completion certification that users can post on their LinkedIn profile.

The first course's lessons are: Lesson 1: What is UV/EB Curing? Lesson 2: Basic Chemistry of UV Curing; Lesson 3: Basic Materials used in UV/EB Curing; Lesson 4: How Do Photoinitiators Work? Lesson 5: Equipment Used in UV/EB Curing; Lesson 6: Environmental Handling and Safety; Lesson 7: Graphic Arts Applications; Lesson 8: Industrial Applications.

Those interested in signing up for UV/EB Chemistry Fundamentals can visit: www.radtech.org/10-min-course.

Covestro Advances PUR Materials

Covestro is still a relatively new name in the marketplace. The company, which was spun off from Bayer's Materials Science division in late 2015, offers a range of coating materials familiar to many former Bayer customers.

At the time of the change, Covestro was cited as having US$12.3-billion in global sales. With its considerable R&D capabilities, it is a powerhouse in the field. Coatings comprise a significant proportion of those sales.

Its range of coatings for demanding outdoor applications is based to a large extent on its capabilities in polyurethanes. Christine Bryant, senior vice-president, NAFTA, says Covestro has teams dedicated specifically to the agriculture, construction and earthmoving markets, as well as the off-road and transportation segments.

"Polyurethane technology plays a significant role in all of these segments," she says, "because coatings made with polyurethane technology offer greater toughness, UV resistance and ease of application; a high-quality appearance and durability; and also are color fast. There are no known color restrictions, as polyurethanes offer an almost unlimited color palette."

Looking ahead at future market needs, Covestro sees factory-applied paints presenting challenges for OEMs and tier suppliers. "We address these challenges by offering coatings that eliminate the need for ovens," Bryant says, "and also newer mono-coat technologies that eliminate primer layers."

Covestro's polyaspartic urethane coatings are used widely, including in agricultural applications.

Future, expanding markets for such heavy-duty coatings offer wide-ranging potential. These include wind energy systems, oil and gas refining and bridges.

"Traditional polyurethane coatings made with our materials have been used to protect infrastructure for many decades and continue to do so even in emerging markets, such as wind energy," Bryant says. "A more recent coating innovation brought to this market by Covestro is polyaspartic urethane coatings. Polyaspartic urethane coatings provide physical properties similar to traditional urethanes but can be applied at significantly higher film thicknesses.

"The increased film thickness allows for excellent corrosion protection with fewer coats of paint, increasing painting efficiency and lowering the overall cost to paint. Polyaspartic urethane coatings have found use across multiple infrastructure and industrial segments."

The company has found that two-coat polyaspartic urethane coatings can protect steel bridges from corrosion for well over a decade. In a paper joint written last year by Ahren Olson, Covestro's market manager for corrosion protection, coatings, adhesives and specialties, and Mark Hudson, project development manager, Bridge & Highway with Sherwin-Williams, the authors reported how studies have shown that the application of polyaspartic urethane two-coat systems can save departments of transportation up to 20 percent on field repainting costs.

The paper discussed results of one study using two-coat polyaspartic coatings for the field repainting of over 100 steel bridges in Virginia. It compared the field performance of polyaspartic urethane two-coat systems and moisture-cure urethane three-coat systems on steel bridges in western Virginia after 10 years of service.

The research showed that polyaspartic urethane two-coat coating systems offered corrosion protection equivalent to conventional three-coat systems. With performance being equal, polyaspartic urethane two-coat systems provide significant value to bridge owners with cost reduction in painting operations, accelerated painting schedules and milder traffic congestion. Polyaspartic urethane two-coat systems, the authors added, also exhibit excellent edge protection in areas where corrosion is likely to start.

Coatings Tech Conference

The Coatings Tech Conference for 2017 is coming in March. The event will be held at the Westin Cleveland Downtown Hotel in Cleveland, OH, from March 20 through 22.

The host hotel, the Westin Cleveland.

The conference is sponsored by the American Coatings Association. The ACA says of this gathering, "Through a series of special lectures from notable industry experts, focused technical sessions aimed at fully exploring key topics, and critical advanced training sessions, the 2017 ACA Coatings Tech Conference offers an unprecedented opportunity for all levels of coatings professionals to participate and learn from each other. Each session will provide attendees with a track for individual interests and specialization."

The first morning, Monday March 20, features short courses on topics that include defects in paint film, weathering and service-life, smart and multi-functional coatings, as well as an introduction to coatings technology. The afternoon of the same day has open forums on R&D management, and special challenges in R&D. Other courses and lectures during the conference will cover the full range of current and emerging technologies.

There is a welcoming reception and student poster display in the late afternoon of the first day, and a networking reception in the late afternoon of the second. The price for ACA members for the full event is $995, and for non-members, $1095. Online registration can be made at www.paint.org.

ElektroPhysik has been in the business of supplying precision measuring devices for 60 years. It was founded in Germany in 1947, and today maintains a global network of branches and agents, including its North American headquarters in Arlington Heights, IL.

The company's specialty is coating thickness measuring instruments used for advancing surface technology, research and quality control. It is famous for MikroTest coating thickness gauges, which use the magnetic attraction principle. This gauge has been called the 'banana gauge" because of its shape, and is strictly for non-magnetic coatings applied over steel. MikroTest is probably the most widely utilized coating thickness testing gauge in the world.

Other company brands include the MiniTest, eXacto, and GalvanoTest which are electronic platforms for measuring coatings over both ferrous and non-ferrous substrates. Additionally, in North America ElektroPhysik represents Sheen Instruments of England, an Elektron Technology Ltd. company. Sheen Instruments is a well-respected manufacturer of viscosity testing products and devices, film application products, gloss and opacity testing devices and physical testing devices, operating according to ASTM and International Standards.

ElektroPhysik prides itself on sensor technology. The latest development in that area is its SIDSP®, an ElektroPhysik exclusive which took years of research and development. SIDSP stands for Sensor Integrated Digital Signal Processing, since the entire coating thickness measurement is processed in the sensor itself at the point of measurement.

SIDSP® is unlike conventional techniques where an analog signal is generated by the probe and sent to a host gauge for processing. The vulnerability with this has always been that the analog signal is susceptible to environmental influences, such as strong electro-magnetic fields and other signal disturbances. ElektroPhysik's SIDSP® sensor platform eliminates that.

The company recently introduced its SmarTest platform of sensors and SmarTest App (available from the Google Play Store). This platform includes ElektroPhysik's wireless SmarTest digital SIDSP® sensors, and takes coating thickness testing to a whole new level.

Using Bluetooth connectivity, ElektroPhysik's SIDSP® Digital Sensors send readings, as they are taken, them directly to a smartphone or tablet. Those readings are stored by the SmarTest App along with statistical data and, can be easily emailed as an attachment from a smart device.

ElektroPhysik has a website exclusively for North American customers, at:

www.ElektroPhysikUSA.com.

For further information, you can contact the company at:

ElektroPhysik U.S.A.
778 W. Algonquin Rd.
Arlington Heights, IL. 60005
Phone: 800-782-1506
847-437-6616
Fax: 847-437-0053
info@epkusa.com

Sherwin-Williams Names ProVisions Award-Winners

The winners of Sherwin-Williams ProVisions Awards for 2016:
Pat Herman, senior sales vice-president, Sherwin-Williams; Brian Gaylord, national sales manager, EPSI; Jena Ottery, product manager, EPSI; Robert Cooksey, east regional sales manager, EPSI; Bob McElroy, marketing manager, sales support programs, Sherwin-Williams; and Dan Drellishak, marketing director, facilities and programs, Sherwin-Williams.

Sherwin-Williams, through its Product Finishes Division, has announced four winning business partners. The announcement was made during the eighth annual ProVisions Vendor Awards Ceremony held at the Hilton Orlando, in Orlando, FL, on February 1. The ProVisions program augments Sherwin-Williams wood and general industrial market coatings and programs, by offering OEMs and job shops more than 10,000 brand-name supplies and equipment to address the entire finishing process, from sanding to shipping.

Engineered Products and Systems, Inc. (EPSI) received the top honor and was named Partner of the Year. EPSI earned the award through its implementation of a comprehensive core products initiative that includes training, sales tools and call support, for their standard masking products including masking caps, plugs, stoppers, masking die-cuts, masking tapes, tubing and sheeting, and hooks. EPSI supplies a vast range of masking products, along with its EPSI Guarantee and guaranteed stock program. EPSI was also a ProVisions Award winner in 2015, earning the Marketing Excellence Award.

The Facility Operations Support Award went to Nexeo Solutions, which helps customers streamline solvent processes through its line of solvents and solvent blends, custom blending program and equipment offering, and just-in-time product delivery. Nexeo's award, Sherwin-Williams stated, is the result of its responsiveness in making product recommendations and developing sales growth opportunities for Sherwin-Williams facilities.

Mirka USA was the winner of the Field Sales Support Award, supporting the Product Finishes Division's supply line capabilities by enhancing product delivery to customers. Mirka is one of the world's largest producers of coated abrasives, also offering tools, accessories and polishing components.

Finally, the Marketing Excellence Award went to Parker Ionics for its implementation of a comprehensive powder coating spray equipment program comprised of product and sales training, as well as sales call support.

"These key partners, along with the many others that comprise our ProVisions program, are focused on helping our customers develop innovative solutions that ultimately help grow their businesses and their bottom lines," said Pat Herman, Sherwin-Williams Product Finishes Division, senior sales vice-president. "Through a team effort, the ProVisions program continues to grow and add value to Sherwin-Williams customers."

PEOPLE NEWS

AAC Elects Officers

Results of the Aluminum Anodizers Council's (AAC) annual election of officers and directors were announced at the 25th Annual Anodizing Conference and Exposition on October 5 in Montreal. Jack Tetrault, partner with Katahdin Industries in Massachusetts, chief operations officer for D-CHN, and president of Sanford Process Corp. in Woonsocket, RI, was elected to serve his first one-year term as chairman of the Council.

He has over 35 years' experience in the anodizing industry, and earned his business degree from Johnson and Wales University. He has owned and/or operated anodizing job shop businesses in New England since 1984, and has his name on three anodizing patents.

Todd Hamilton, branch manager for Southern Aluminum Finishing Co. (SAF) in Atlanta, GA, was elected to a one-year term as vice-chair of the Council. He is filling an unexpected vacancy on the board. He first joined the AAC Board of Directors in 2006 when he was elected as a firm director. He previously served as vice-chairman in 2008-2010 and as chairman from 2010 through 2013.

Four new members were elected to the board of directors. Shayne Seever, vice-president, administration, at Sierra Aluminum in Riverside, CA, and Lewie Smith, president of Jordan Aluminum Extrusion in Memphis, TN, were elected to new two-year terms as firm directors. Mary Oakley, manager – national accounts at Potash Corp. in Northbrook, IL, was elected to serve a two-year term as a supplier director and Scott Walker of Products Finishing Magazine in Cincinnati, OH, was elected to serve a two-year term as a professional director.

Remaining on the Board of Directors are firm director Roger Thomas, senior manufacturing engineer at Alexandria Industries in Alexandria, MN; firm director Ed Burlingham, president of Burlingham International in Costa Mesa, CA, and Janette Courtney, environmental compliance manager at Bonnell Aluminum in Newnan, GA.

The Aluminum Anodizers Council is the international trade association of firms engaged in aluminum anodizing and whose mission it is to support its members—and users of anodized aluminum—through education, advocacy, " and promotion.

At Katilac Coatings Inc. we strive to produce the highest quality coatings to enhance the look and give protection to your woodworking project. Katilac Coatings is a division of Halton Chemical Inc. who have been toll manufacturing and private labelling wood coatings for over 50 years.

Proudly engineered & manufactured in Canada

Our professional wood coatings are based on the most current Scandinavian style chemistry using the highest quality domestically sourced raw materials. Our team of chemists is led by Dr. Richard Johnston. With 35 years of experience in formulating, problem solving and troubleshooting, Dr. Johnston and his staff are capable of handling even the most specialized client request for solvent borne & waterborne products, polyurethanes, lacquers and related wood coatings. All our products are manufactured and thoroughly QC tested at our production facility in Burlington Ontario.

Industry Leading Products

At Katilac Coatings we offer a breadth of products to suit most wood coatings applications. We have traditional pre-cats and post-cats, conversion varnishes, waterborne coatings and colour systems including stains, dyes, glazes, and opaque finishes. We also pride ourselves on innovation.

At the forefront of KCI's new product introductions is the PURE™ line of formaldehyde free coatings. For companies wishing to be greener but reluctant to make the switch to waterborne coatings, the PURE™ formaldehyde free solvent based line up is a great alternative. They can be used as a drop-in replacement for traditional solvent-based systems. There is a clear pre-cat called PUREGUARD™, a conversion varnish called PUREVAR™ and a sanding sealer called PURESEAL™. The topcoats can be used self-sealing or with the companion sealer.

Another new offering is the VISTA™ Waterborne Power Glaze. It's a water based, dry powder glaze that can be used with both water and solvent systems. It comes in a neutral base and can be tinted to achieve limitless colour possibilities.

Distribution Centres

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

Our locations:

840 Appleby Line
Burlington, ON L7L 2Y7
Phone: 1-877-549-5165
Fax: 905-637-8918

391 Hanlan Road, Unit #1
Woodbridge, ON L4L 3T1
Phone: 1-877-649-5771
Fax: 905-856-6484

Check out our website www.katilaccoatings.com to find your local Katilac distributor.

Sata Canada Inc.

Sata Canada Inc. launched distribution of Sata Spray products in Canada at the start of January.

Albrecht Kruse, CEO of Sata GmbH & Co. KG (Kornwestheim, Germany), welcomed customers and staff to the new SATA Canada headquarters in Vaughan, ON, at a reception on January 26. John Turner was introduced as the Canadian general manager.

SATA began in 1907, manufacturing medical spray equipment. It started making spray guns in 1925 for the Ford Motor Co. to spray the then-new nitrocellulose lacquer on automobiles.

Gila Martow, MPP Member of the Provincial Parliament for Thornhill presented Sata with a commemorative scroll at the event.

Albrecht Kruse, CEO SATA.

John Turner , General Manager. SATA Canada.

Gila Martow, MPP, Thornhill.

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

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

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

Trust Daemar and our extended team's expertise to solve your masking challenges.

Sata Canada Inc.

Since 1964 Gemini Industries has been dedicated to the wood finishing industry. Founded in Oklahoma, Gemini began as a local manufacturer, grew into a regional player in the 70's, a national supplier in the 80's and now provides wood finishes to the entire US market and Canada.

Excellence is at the heart of everything at Gemini. As an employee owned company, Gemini is a different company than most wood finish suppliers. When you are talking to a Gemini team member you are talking to someone who has a stake in the outcome, an owner. You will find that you are treated better, supplied better and supported better because of this ownership culture.

It's the people at Gemini that make the difference; coming from a mid-western culture and one of ownership, the people at Gemini are interested in only one thing, supplying you with the best wood coatings in the market today. The 150 team members at Gemini are dedicated to the manufacturing of superior wood coatings, wood coatings technology and to servicing their customers.

Gemini is committed to leading the way when developing environmentally friendly coatings. Low VOC, low HAP's, low formaldehyde coatings have always been a priority for the Gemini Research and Development department.

Gemini has always believed in quality training and offers classes that include special effects , glazing techniques, touch up and repair of finishes, coating technologies, green coatings and spray techniques.

Wood coatings are a focus for Gemini, whether it is a conversion varnish, urethanes and acrylics, UV curable coatings, waterborne or LEED compliant coatings. Gemini's technical staff works to stay on the leading edge of coatings technology.

Each Gemini product and service offers a promise exemplified in our company slogan, Finish With Excellence. Every Gemini Industries co-owner is committed everyday to backing that promise up!

Two Sides of the Same Coin: Regulation and Sales

By Gary LeRoux

Corporate responsibility is an underlying principle of Canadian industry. Over many decades companies have made significant investments in the quality of their products and the reputation of their brands, particularly with regard to safety. Marketing safe products is not only the responsible thing to do, it also makes good business sense to ensure the public's trust in the products they use, need and enjoy. In many respects product quality is driven by regulation and standards, and understanding both is a critical requirement for effective operations, including marketing and sales.

Companies, including their employees, their shareholders and the communities in which they operate, demand the substances used in products are safe for human health and the environment. Since 2006, both industry and government have made a tremendous effort regarding the safety of chemical substances, which have been undergoing rigorous assessment under Canada's widely respected Chemicals Management Plan.

This effort will continue over the next five years in the third and final phase of that program, in which 40 percent of the 1,550 substances to be assessed are used in the paint and coatings industry. It has not been without costs however.

Regulatory development—or the potential of new regulations—can be challenging, contentious and all-consuming for industry, including the paint and coatings industry, as it is a highly regulated sector. Despite the challenges, however, regulations have helped make the paint and coatings industry the leader in terms of return on investment of all the chemical sectors, as regulation creates a substantial barrier to entry.

This is evident from the flurry of acquisitions in the paint and coatings industry by major multinational companies as well as private equity firms. Major R&D investment is required for new technological innovation in formulations, which is essential for enhancing product performance. It also constitutes a formidable barrier to entry.

Though an important part of the industry, paint and coatings is much more than the colour on your walls. It includes many specialized segments beyond the architectural and automotive sectors, such as industrial, marine, coil, packaging, powder, wood, transportation, adhesives & sealants, OEM (e.g., metals, plastics, electronics) and inks.

These segments represent about half of the $125-billion global paint and coatings industry. These segments have all been subject to regulation and will continue to be for the foreseeable future.

The widely respected McKinsey & Co. recently completed a study on the cost of regulation. It noted that, "The business value required for effective intervention or engagement (on regulations) is substantial with a staggering 30 percent of earnings for companies in most industries and even higher in some. One European utility revealed the ongoing value at stake from regulation was €1.5-billion, or about €30-million for every employee involved in handling the company's regulatory affairs." While this may be an extreme case, McKinsey's thesis is that given such a colossal impact companies should structure government relations as carefully as other business functions. However, it found that it was not the case.

McKinsey's most recent annual survey showed that less than 30 percent of executives said they had what was needed to respond to regulatory challenges. Only 20 percent reported they had regular success on influencing government policy and regulatory decisions, which has been consistent over the four years the study has been done. It cites some of the reasons for this, which include the following:

- Corporate government affairs teams are often buried under a support function, with limited clout and often without business leaders really understanding what they do.
- Government affairs and external communications functions are separated, operate independently and often don't report to the same executive, and don't always communicate on key regulatory issues as much as they should.
- Companies have different functions involved in external engagement, and identification of the number of employees involved at the corporate, business, and country levels is a huge exercise for most.
- Public-policy teams work in the shadows, so no one really knows what the worst outcome could have been if they had not engaged stakeholders appropriately, while making it difficult to track and quantify the real impact.

What is the solution? McKinsey argued that the importance of regulatory affairs and government relations staff would only grow as industries incorporate the function into critical decision-making. Some of the fixes include the following:

1. Clarify scope and structure: Top companies ensure their regulatory affairs or government relations staff "excel at

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

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

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

Some of our Masking Products include:

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

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

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

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

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

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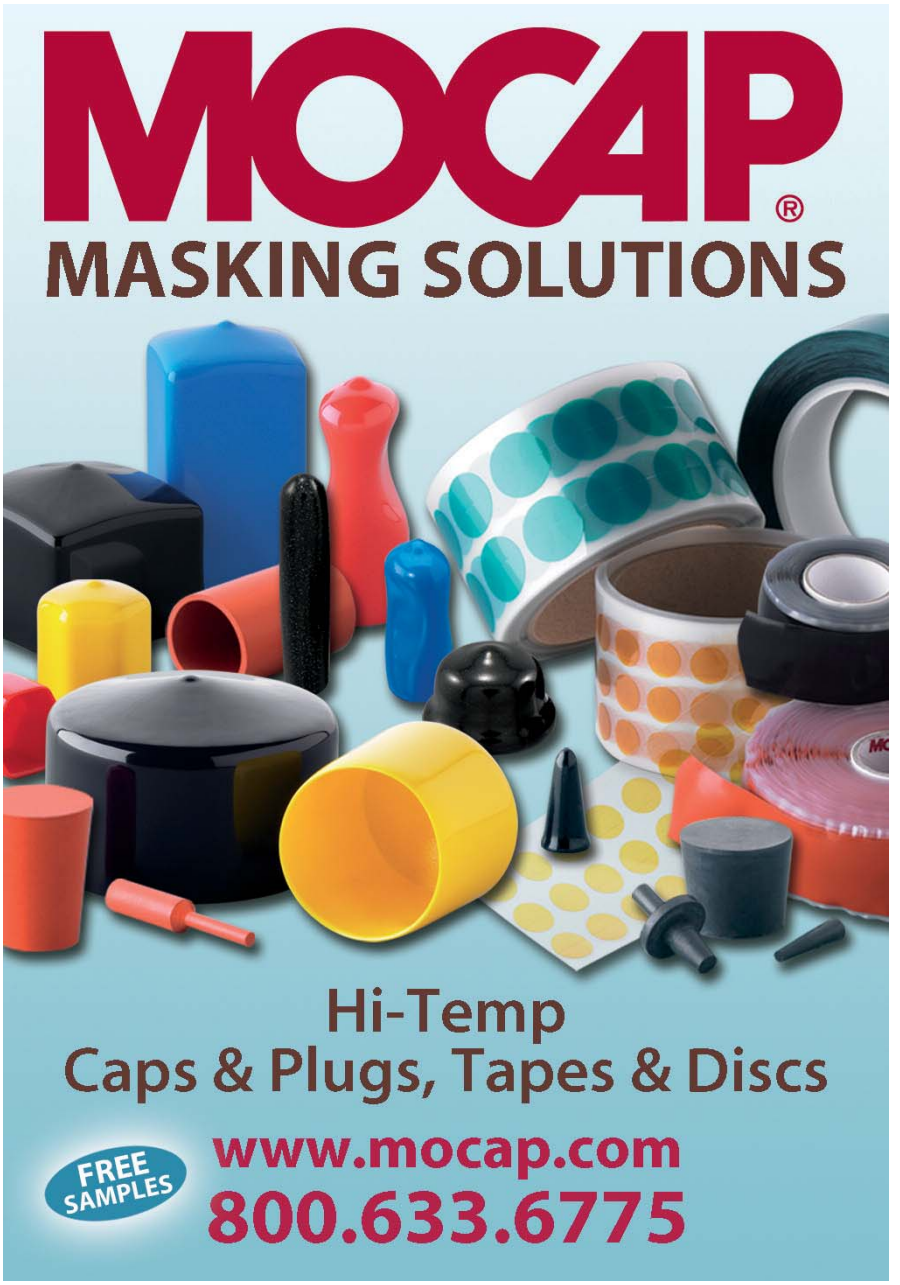

economic analysis and stakeholder engagement, not just at lobbying and industry-group participation." In such cases staff identify relevant issues, develop positions, and compare with other sectors and jurisdictions to ensure they can anticipate a broad range of regulatory outcomes.

For example, McKinsey notes that "Leading groups quantify the impact of these outcomes on all parties involved, not just their own companies, by including the regulator and even the broader industry in their analyses. This approach dramatically improves the quality of engagement and can even break through seemingly deadlocked situations—for example, when a company can quickly and accurately show a regulatory proposal's negative consequences for national employment rates or tax revenues."

It is also important to identify all the stakeholders at the outset to ensure decisions taken are strategic, consistent, proactive and coherent in terms of impact with respect to a regulatory strategy. That said, the analysis must be accurate and relative vis-à-vis the impact, or it will do more harm than good as it will be easily refuted and challenged by policymakers.

In situations where decentralized regulatory affairs teams are required, such as in highly regulated industries calling for deep country-level expertise, companies have successfully created dual reporting relationships linking external affairs with both the country head and the corporate function. In such instances, the corporate office can help quantify the value at stake, share best practices and ensure the company's broader interests are accounted for.

2. Orchestrate activities across the business: McKinsey notes that "When ties to the CEO are more distant or ambiguous, regulatory affairs staff risk losing touch and becoming disconnected from important business issues. Such disconnects are deadly, since the ability to convene and collaborate across functions on regulatory issues is vital for success."

For example, without an understanding of the business imperatives and the need to get products to market in a timely fashion, in full regulatory compliance and meeting customer demand, the regulatory decision-making can be misguided. The ultimate support of the regulatory function is to facilitate operations and meet market demands, which ultimately helps the bottom line, and which is what the C-suite wants and company shareholders expect.

Regulatory affairs functions can also become alienated from organizations by getting involved with issues late in the game and as McKinsey notes, "late involvement can have substantial economic costs if, for example, a product is developed without input from regulatory affairs and later fails to get approval from regulators." These key aspects must be factored into the overall regulatory approach.

It is also important from a jurisdictional or a geographical perspective. McKinsey provides the following example: "The European arm of a diversified manufacturer sought to avoid organizational disconnects by maintaining a small group of geographic and topic experts who help the business units with priority issues, project by project. When the company wants quick but deep engagement on an issue, say, the taxation of a category of offerings in a particular geography, product and country experts can join colleagues from the local finance and operations teams to work with the relevant business unit." In each country, understanding and support are critical for multinational corporations.

3. Build talent and accountability: Once a company clarifies how the regulatory affairs group is structured and what it will do it must then determine the best way to collaborate with other functions and staff the right people. McKinsey notes three types of leaders for this job: "Industry veterans, with deep legal or economic training, the role's classic profile; high-profile lobbyists or former politicians who bring credibility and clout, useful when companies face pressure on a particular issue; or internally promoted business insiders, useful in strengthening cross-functional connections and gaining buy in." All can work together depending on the company and the regulatory challenges and, most importantly, the respect it retains among senior management.

To improve understanding of the overall importance of the regulatory function, a European power company publishes an internal newsletter to keep senior management informed of evolving regulatory topics and to enhance awareness with respect to the considerable value at stake. It points out that, "The newsletter keeps the group more connected to business issues and improves morale by raising its profile in the company. While few best practices have been identified thus far, some companies are taking the same analyses they use to understand the regulatory value at stake on a given issue and adapting them to their performance management systems."

These quantitative measurements are then complemented by more indirect indicators, such as the quality of relationships with important stakeholders or changes in the level of access to them over a period of time. The goal is always to link performance directly to real business outcomes, which is critical from a transparency and a governance perspective.

Canadians should be—and most are—proud that they have the highest standards of product safety in the world. This is based on a long and successful history of collaboration between government, industry and consumers.

Overall, Canadian manufacturing processes, including imported goods, are governed by more than thousands of federal and provincial pieces of legislation, as well as thousands of regulations and self-imposed industry standards—all of which Canadian industry meets or exceeds regularly. This is especially true in the case of the Canadian the paint and coatings industry. ■

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

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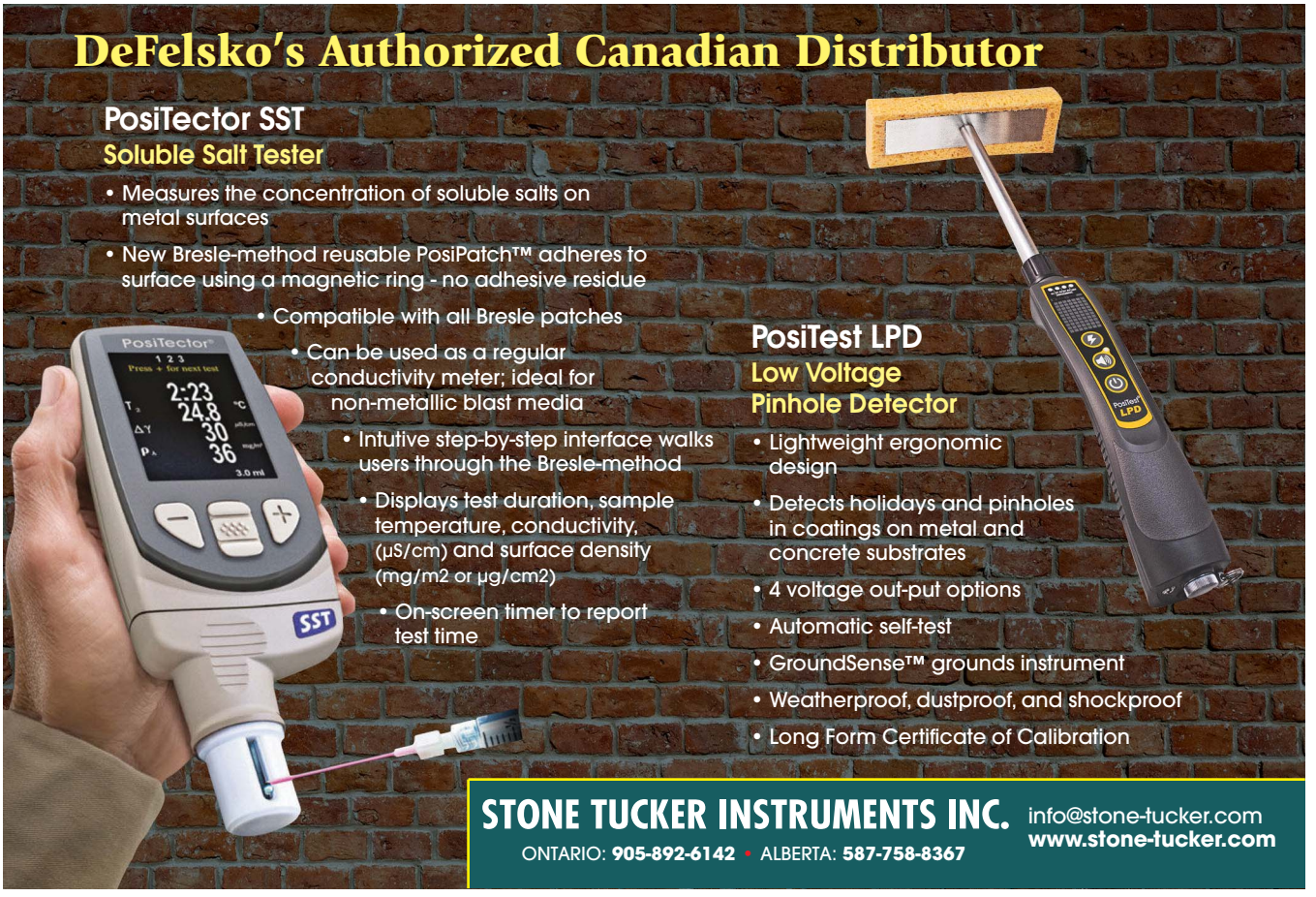

The Work Continues in 2017

BY GARY LEROUX

CPCA worked hard in 2016 to ensure industry and government officials were systematically informed of developments leading up to the new year via special events, meetings and publications. With a great deal of activity in store for 2017, CPCA is prepared to meet all challenges head on.

Tighter Regulations Looming

In December, CPCA submitted a second comprehensive brief to members of the federal Parliamentary Standing Committee on Environment and Sustainable Development (ENVI), which called on stakeholders to address a non-exhaustive list of matters related to potential amendments to the Canadian Environmental Protection Act (CEPA). These included a call for excessive application of the precautionary principle and a need to accept substitutes, despite the cost, based on concerns raised in chemical assessments—whether designated toxic or not.

The government's own recommendations to the Committee made by the Minister included removing substances from the Domestic Substances List (DSL) if they are not in commerce and expanding the risk management toolbox under CEPA, such as the use of Environmental Performance Agreements. Parliament should receive the final Parliamentary Committee report in March 2017 and the government must formally respond by August 2017.

At the biannual CPCA Paint and Coatings Working Group meeting on December 2, with more than 30 industry and government representatives in attendance, CPCA advised Environment and Climate Change Canada (ECCC) and Health Canada of industry's concerns with the recommendations made to date on a number of issues related to chemicals management and other current regulatory matters. CPCA will continue to monitor Parliamentary Committee hearings and report to members on future actions taken by the association to counter NGOs' representations for more stringent regulations on industry in terms of the potential or real impact on important segments of the economy. CPCA and its members benefit a great deal from the work performed by the PCWG Committee, particularly because the association can provide members with first-hand feedback related to the necessary data required for accurate and evidence-based information for proper risk assessments.

In the past this has served industry well with no bans of substances used in the sector, several voluntary codes of practice and appropriate regulations where needed. Ultimately, this makes it easier for industry to comply with risk-management measures imposed by the government. The federal government has lauded CPCA's efforts on this to date. The working group will continue to meet in 2017 to provide members with relevant and timely updates on the chemicals that are implicated for assessment under the Chemicals Management Plan (CMP). The goal of PCWG is "early warning" of what is expected on the issues and how the industry can collectively respond before these issues become problems for members.

Ottawa to Impose Changes to GHG Reporting Requirements

Protecting the environment is critical for industry and CPCA keeps an eye on related government developments as they unfold, to ensure members remain compliant with their long-standing commitment to sustainability. This is particularly evident when Ottawa proposes revisions that could impact businesses' reporting processes.

A case in point is the recent Notice of Intent and proposed changes to the Greenhouse Gas Reporting Program,

About Us

CGS Tape (Creative Global Services Inc.), is a manufacturer of pressure sensitive adhesive tape for a wide range of different industries. With headquarters located in Newmarket, Ontario, CGS have been proudly serving the North American market for over 15 years.

CGS features a comprehensive masking tape line for the coating and finishing industry, most of these are UL-Listed and are tested to withstand the most demanding applications. And all materials are always stocked to fulfil any small or large order as required.

As a partner, we make it our goal to understand the process, design, and cost target of your requirements. Our manufacturing and converting division incorporates state of the art equipment and processes to meet today's demanding market, with precision and minimal lead time. CGS also has one of the fastest order fulfillment process in the industry, with all standard orders shipping out on the same day as they are received.

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expanding the reporting requirements for GHG emissions. More specifically, the government proposed lowering the reporting threshold to 10,000 tonnes from 50,000 of carbon dioxide equivalent, with all facilities obligated to submit a report. The reporting of additional data includes providing more detailed emissions as well as the quantities of fuels or feedstocks consumed. Sectors are expected to gradually phase in these new requirements over time.

The government revealed that it is focused on strong emitters for the first phase, those involved with carbon capture and geological storage, as well as electricity generation. No information for Phase 2 and subsequent phases is currently available.

It should be noted that ECCC wants to align these new reporting requirements with those in British Columbia, Ontario, and Quebec. According to the federal government, which initiated the reporting program through the publication of annual notices under CEPA in 2004, the reporting of accurate, consistent and internationally comparable data on greenhouse gas emissions is key to monitoring progress on emissions reduction. It is also important for informing and directing the development of emission reduction programs and policies. CPCA is gathering member feedback to determine possible impacts and these will be submitted to government on their behalf.

WHMIS 2015 Update

Manufacturers and importers must ensure their safety data sheets and product labels are fully compliant with the modified Workplace Hazardous Materials Information System (WHMIS), which is now aligned with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) for workplace chemicals in Canada, by 2017. The WHMIS 2015 requirements are outlined in the amended Hazardous Product Act (HPA) and the Hazardous Products Regulations (HPR). In early December, CPCA distributed specific guidance information to members regarding the publication of consolidated technical guidance on the requirement of HPA and HPR in two phases.

Released last June, the Phase 1 document highlights classification principles, hazard communication and confidential business information. Health Canada hosted two webinars on this phase last October. To ensure members stay informed, CPCA made the presentation decks of these webinars available in the Member Resources section of the website. The Phase 2 document focuses on physical hazard and health hazard classifications, outlining details on HPA requirements as well as on the transition timelines for manufacturers and importers to comply with the new standard. Variances between WHMIS and the 2012 U.S. Communication Standard are included as well.

CPCA also shared relevant information with its members over WHMIS 2015 requirements on the transition phase for manufacturers who are, in fact, distributors of their own industrial products. Specifically, manufacturers that import or resell industrial products without repackaging or re-labelling can be considered distributors. If this is the case, they can comply with the longer WHMIS 2015 transition period of June 1, 2018. The association also advised that hazardous products sold at retail outlets and considered "consumer products" under the HPA definition are exempt from WHMIS 2015 supplier labelling and SDS requirements.

In another GHS development, the European Confederation of Paint, Printing Ink and Artists' Colours Manufacturers Associations (CEPE) and the International Paint and Printing Ink Council (IPPIC), of which CPCA is a member, announced their participation in the 32nd Session of the UN Sub-Committee of Experts on GHS. CPCA informed its members that all amendments, such as the use and revisions of the manual of tests and criteria that were agreed on at the 29th to 32nd sessions, will be incorporated into the seventh revised edition of GHS, scheduled for publication next summer.

CPCA also responded to Health Canada's questions on modernizing intergovernmental partnership and stakeholder relations for hazardous products under WHMIS. The opportunities for improvement now being reviewed will help determine further guiding principles, the future mandate and/or role of committees, structural or consultation options, and improvement strategies.

Risk Management Actions

In October, CPCA members received information on the government's risk management actions planned for certain flame retardants in CMP-Phase 2 subgrouping, published in a Draft Screening Assessment Report. The government said it will launch a risk management section 71 survey in 2017, requiring industry's feedback, to support implementation and compliance with respect to the actions being taken and to identify new sources of exposure. It will also look at the current risk management measures to control the use of flame retardants and whether or not further measures will be needed. It is clear that there will be actions taken to restrict the use of flame retardants in coatings. The key question is what will such measures be and what will be the impact on certain products and uses that rely on flame retardant coatings.

CPCA also advised its members that the third phase of the Domestic Substances List of chemicals Inventory Update (IU) is now called IU3, following the government's decision to include some new substances the list of substances already found in the inventory update.

ECCC considered adding some substances found the of the Food and Drug Act. IU3 will be launched in 2017, with companies expected to use 2014 or 2015 as the reporting year. CPCA informed members they will have

Helping Shape the Future of Your Business

The Canadian Paint and Coatings Association (CPCA) was established in 1913 to represent the national paint and coatings industry, including adhesives & sealants, championing the interests of manufacturers and suppliers/distributors. CPCA helps support member efforts in delivering thousands of highly performing products in a multidimensional industry: automotive, automotive refinish, coil coatings, decorative, general industrial finishes, marine, OEM segments, packaging finishes, powder coatings, transportation coatings and wood finishes.

CPCA does so by offering value-added services in key areas including health, safety and environmental affairs; issue management; government relations and regulatory development; and economic sector analysis. It also strongly advocates for industry in important areas such as sustainability, product stewardship and technological innovation. This is done by working together with members, industry stakeholders and government.

In support of ongoing advocacy efforts on behalf of members, CPCA:

- Provides regular statistical and data analysis of sales and industry trends to help ensure members stay on top of their business plans;
- Provides ongoing professional development via webinars, sector working groups and online training in coatings technology;
- Delivers must-read communications that help members keep abreast of latest developments; and
- Hosts key networking events such as the annual conference and AGM.

All CPCA communications are available in print and digital formats and include regular publications and updates on management and marketing, regulatory developments and compliance requirements. Members have access to all publications archived for their reference in a comprehensive Member Resources Centre.

CPCA takes a proactive business approach to help members deal with current and future business impacts.

Help shape the future of your business. Become a member of CPCA today. www.canpaint.com

Canadian Paint and Coatings Association

between six and nine months to report on substances for inclusion. The association will review the list, and identify, the substances implicated in the coatings industry. The IU3 will target roughly 1,500 substances from the Non-domestic Substances List, the Domestic Substances List and the In-Commerce List and will be divided into four parts. Parts 1 to 3 contain 220, 26 and 507 substances respectively. Part 4 includes substances found in pharmaceuticals, genetic therapies, medical devices, cosmetics and food additives to name a few.

Potential Environment Canada Enforcement on VOCs

The federal government introduced the Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations eight years ago to protect the environment and Canadians from the effects of air pollution. Consumer and commercial use of architectural coatings led to the emission of VOCs by evaporation during the drying process. Last fall, CPCA advised its members of the deadlines to stop manufacturing or importing and stop selling or offering for sale all 53 category VOC limits found in the regulations, i.e. those exceeding the 350 g/L limit at retail outlets. Concentration limits range from 100 g/L to 800 g/L depending on the category: general architectural coatings, industrial maintenance coatings and traffic marking coatings. It is important that all companies are in full compliance with those limits, as breaches of these limits will reflect badly on the entire Canadian coatings industry.

Although producers are the primary target, all paint manufacturers or importers should note that the federal government could dispatch inspectors to paint manufacturing establishments and retail outlets to track potential sales of non-compliant products from all sources. CPCA urged members to ensure VOC compliance of their own products, especially solvent-borne products, and ensure their clients or retailers remain in full compliance as well. CPCA also informed its members that ECCC will assess the current Canadian marketplace and options for further VOC reductions from applying the Ozone Transport Commission II limits in the Architectural VOC Regulations.

In another development, CPCA recounted last fall that it was monitoring developments between the American Coatings Association and the Federal Trade Commission regarding ACA's Continuous Emission Study and Market Basket Study. CPCA's sister association said it will provide data in response to questions arising from green building codes related to indoor air quality. Neither study would address questions related to low or zero VOC content in coatings. CPCA advised its members trading in the United States about a possible litigation with FTC regarding environmental claims and the release of new FTC guidance in future. CPCA is concerned that the new guidance could encourage the Canadian Competition Bureau to undertake a similar initiative.

CMP Progress Report

In November, CPCA participated in a meeting with the new CMP Stakeholder Advisory Council (SAC), comprised of 12 NGO organizations and several industry associations, which shared the latest information on the CMP program. CPCA recognizes how critical its participation is to ensure industry—and its members in particular—stays on track with CMP developments.

CPCA continued to collaborate with ECCC in support of targeted information gathering under CMP- 3 until the end of 2016. With the government seeking information for six high eco-priority organic groupings like resins and rosins, specifically on their ecological risk assessment exposure scenarios, CPCA encouraged its members to provide information, in particular those that manufacture, import or use more than 100 kg of any domestic substances whether alone, in a mixture, in a product or in a manufactured item.

With member support, last November, CPCA compiled a list of CMP-3 substances currently used in paint and adhesives formulations. This information will help the government better assess or prevent any inadvertent, negative impact of various risk control measures on the industry. Furthermore, CPCA can use this information to inform future discussions and interventions on the work performed by the government.

The association also participated in a meeting organized by the CMP Science Committee in November, as part of a stakeholder webinar on the integration of new methodologies to be used in CMP to identify priorities for risk assessment. The objective is to prioritize exposure scenarios to help the government manage the risks associated with these substances. The Committee plans to publish a detailed report in the first six months of 2017.

CPCA informed its members that the government published a final code of practice for DEGME in early November, targeting a concentration limit of less than 1% w/w DEGME in consumer products that are surface coating materials. It should be noted, however, that the existing Significant New Activity provisions for DEGME have yet to be amended. The association also provided information on who should submit a declaration with respect to the use or import of DEGME in products.

Staying Informed

2016 was a year filled with many developments and this year will be no exception. CPCA will continue to keep its members fully informed of developments that could potentially impact their bottom line over the course of 2017. ■

Gary LeRoux is president and CEO of the Canadian Paint and Coatings Association, www.canpaint.com.

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The machines and plants manufactured by the Grinding & Dispersing business unit are used primarily in, but not limited to, the following areas of application: paint, pigments, inkjet, ceramics, chemicals, confectionery, cosmetics, pharmaceuticals, inorganic matter/minerals, sealants and adhesives, and battery. The demands placed on machines and technologies in these industries are vary. They must be reliable, have a long service life, be easy to operate, and custom tailored for each application.

CPCA Christmas Lunch

Christmas is now a fading memory – but here are some images of the Canadian Association for Surface Finishing's annual Christmas Lunch. Several dozen members came together to celebrate the season and hear about their association's plans for 2017.

Canadian Paint and Coatings Association

Company Description

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

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Chromaflo Technologies is the leading supplier of additives and pigment dispersions for the industrial coatings market, offering a wide range of high-performance colorants in liquid resin based 100% solids, solvent borne, waterborne, low VOCs and CAB chip dispersions. Products are made with sophisticated equipment for batch-to-batch consistency. To ensure the highest quality possible, products are also rigorously tested in our state-of-the-art laboratory to meet each customer's unique specifications.

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Canadian Paint and Coatings Association

OPCA Members' Christmas Luncheon

The Ontario Painting Contractors Association held its annual Christmas Lunch in Toronto in December. Pictured here are some of the attendees at the event.

OPCA Members' Christmas Luncheon

The history of "pyrolysis cleaning" is the history of Pollution Control Products Co. The company's founder, Peyton Simpson, designed his first "pyrolysis" cleaning oven to help a neighboring business comply with the Clean Air Act of 1970. The neighboring business was an electric motor rebuilder. Their manufacturing process required that old motors be cleaned thoroughly: its copper wire coil and all varnish, epoxy, paint and insulation removed. Prior to today's stringent environmental laws, this was often done by soaking the motor parts in kerosene and "burning off" the organic material in a pit or metal container resulting in a thick black smoke which polluted our skies with unhealthy toxins. With the passage of the Clean Air Act in 1970 this was now illegal. Other cleaning remedies weren't much better: removing material by hand was slow, expensive, often damaging to parts and physically unsafe for workers because of acids and other dangerous cleaning agents required.

Young Peyton Simpson helped his neighbor solve his problem with the development of his patented Controlled Pyrolysis® Cleaning Oven. Controlled Pyrolysis® cleans parts by using heat in a low oxygen environment to decompose organic material into vapors and pyrolysis gases. These gases (smoke) are then drawn through an afterburner where harmful emissions and contaminates are burned and completely eliminated leaving only water vapor and carbon dioxide exhausted into the atmosphere. His new cleaning process was safe, effective and

pollution-free, and a big hit with his neighbor. And it wasn't long before other rebuilders were knocking on his door and Pollution Control Products Co. was born.

Peyton and his new company quickly adapted their "burn off" ovens for other industries: paint and powder coating operations needed a safe, fast and efficient way to keep their painting hooks and racks pristine in order to maintain product quality and profitability in there productions lines. Most powder coating today is done through an electrostatic coating process. The powder is charged negatively when it comes out of the application sprayer, and the part being coated is charged positively, thus ensuring a good bond and reducing the amount of powder required to coat the part. Ultimately paint and powder coating buildup on hooks and racks reduces the electrical contact resulting in improper coating and wasted powder coating. Not only must the hooks be cleaned regularly, the painted parts may need to be stripped of old paint or powder coating so they can be recoated properly. Pollution Control Cleaning Ovens are now an industry standard with paint and powder coaters.

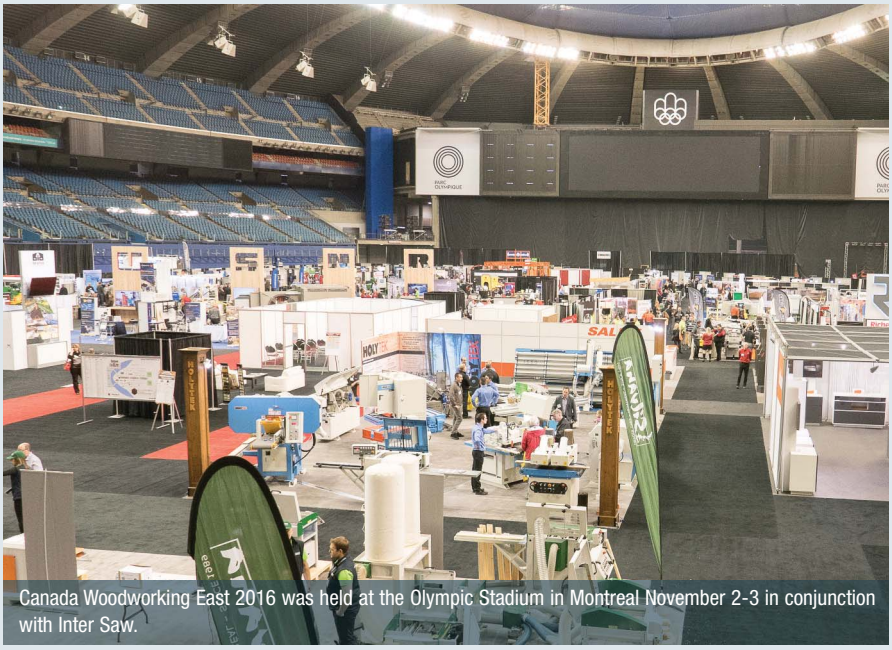
46 years after that first cleaning oven, Pollution Control "burn-off" ovens cover the entire field of thermal cleaning and parts reclamation with more than 8,000 installations in 43 countries around the world. Recognized today as the industry leader, Pollution Control Ovens are in use in over 800 industrial classifications, including paint and powder operations in scores of industries, automotive engine and parts rebuilders, precious metal extraction, oil and gas producers, plastics, fiber and chemical manufacturers and branches of the U.S. Military.

POLLUTION CONTROL PRODUCTS CO.
Controlled Pyrolysis Burn Off Ovens

Canada Woodworking East Attracted Solid Crowds

Canada Woodworking East 2016 was held at the Olympic Stadium in Montreal November 2-3 in conjunction with Inter Saw. The photos here show some of the exhibitors at the two-day show.

Michael Garone and Jessica Faust, Lorchem.


Canada Woodworking East 2016 was held at the Olympic Stadium in Montreal November 2-3 in conjunction with Inter Saw.

Jorn Dettmer, Centre for Advance Wood Processing.


Gaetan Bergivin, Eric Bond, and Patrick Doherty, Graco.

David Bartholomey and Marc Lemieux, IC&S/Silva.

Michel Bresolin, Christian Giguere, ST Rajan, SAMES KREMLIN Marc-Andre Bertrand and Guy Corbeil, Precimix.

Jody Leclaire, Dominic Therrien, Ghyslian Hebert, Eric Vaillancourt, Laurent Guay, Francois Pellerin, CanLak.

Jason Jiang and Lucy Lu, Prona Tools.

Cheryl Davidson and Andrew Scott, Venjakob

Leslie Smith, Sherwin Williams.

Caroline Levesley and Jose Luis De Silva, ICA North America.

Powder Coatings Take on the Tough Jobs

RockHard sliders on the side of a Jeep. Photo: RockHard.

Powder coatings are making increasing inroads into demanding applications. Improvements in formulations obviously drive much of the growth, but creative searching for new applications by the supplier companies is equally important.

The phrase most used for the toughest materials coming onto the market is 'super-durables.' The exact definition varies from supplier to supplier, but in all cases the term refers to powders that were not commercially feasible just a few years ago.

Demand is definitely growing, however. Axalta Coating Systems just added extra capacity in Germany for its Alesta brand powder coatings. It also introduced its Alesta Illusion product line, which features super-durable polyester powder coatings in 12 high-gloss colors.

When viewed at different angles, especially in direct sunlight, the colors produce a special effect and create the illusion of changing color. This technology is designed not only to transform the look of substrates as well as help ensure their protection.

Aimed at the general industrial finishing business, due to its weatherability the Alesta Illusion collection is recommended for exterior projects such as fencing, patio furniture, lawn and garden accents, vending machines, playground equipment, architectural applications, and sports equipment. They are also for interior use on a variety of surfaces including light fixtures, brackets, and metal furniture as well as small and large appliances.

A major concern for customers, says Axalta's Canada group leader – powder, Robert Ablamowicz, is being able to supply the appropriate approvals required for heavy duty markets such as pipe and waterworks applications.

"Our NapGard product line, is used extensively in oil and gas markets," he explains. "For this, we must meet CSA Z245 Canada Standards Association specifications, and have the appropriate certifications. For water works applications, we must meet and be certified as meeting AWWA and NSF 51/61 requirements."

And of course, he adds, price remains a key concern for many customers particularly those that serve in the oil and gas markets. This sector has struggled for the past couple

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

The addition 5 years ago of the US facility has allowed the company great flexibility in dealing with customers. While the Canadian facility acts as a manufacturing base and corporate headquarters, the US facility allows local production of coatings to the US market, as well as warehousing and sales functions.

Erie manufactures a wide variety of standard thermoset coatings, including polyester TGIC, TGIC-Free and polyester urethanes, epoxy, hybrid and acrylic hybrid coatings. But custom manufactured powders are our specialty.

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

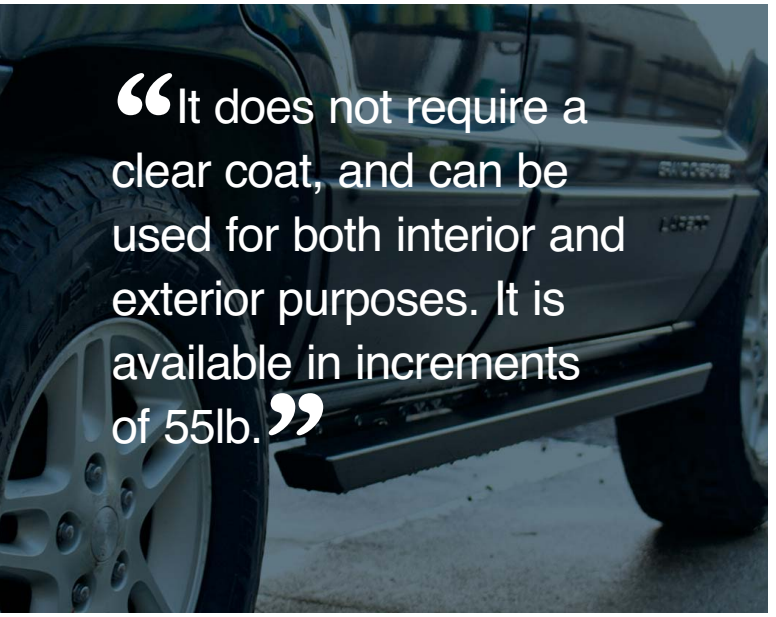
EPC has had a strong offering in some very specialized markets, such as anti-graffiti coatings, SEFA grade coatings and fast cure coatings.

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

Erie Powder offers two lines of SEFA grade products. SEFA (Scientific Equipment and Furniture Association) sets standards for laboratory furniture and cabinets. Erie / EPC has been active in this market and has qualified both epoxy and urethane products that meet or exceed these specifications. While this is a select and niche market, Erie has found this market to be a strong one.

Fast cure product lines are also a specialty that Erie excels in. One of the primary reasons for this is the type of equipment that Erie uses – specialty Swiss made plastics extruders that are better at producing low-cure temperature coatings than other types of extruders.

Erie Powder Coatings is proud to be ISO 9000 compliant.



of years, and is only now starting to see a modest improvement in its fortunes.

"In the heavy duty markets, particularly oil and gas applications," Ablamowicz continues, "there is a real interest in coatings which can tolerate higher underground service temperatures. Today we have systems which can work in sustained temperatures of up to 180 deg. C. With drilling and pipelines going further underground, there is a continuous call for coatings which can operate in temperatures exceeding 180 deg. C."

In the ACE and decorative markets, he notes, customers are very interested in reducing energy consumption and thus there is a push into low energy coatings.

"The bottom of the cure envelope for conventional polyester systems," he says, "has been 325 deg. F (about 163 deg. C) and now the target is becoming 300 deg. F for some applications, though not all.

"There is also interest in dry-on-dry application, particularly in industries where primers have been a requirement. The dry-on-dry systems allow the applicator to eliminate the need for fusing or partially curing the primer before topcoat application. This presents a great opportunity for energy and process savings."

While providing some unique enhancements in areas such as edge coverage, Ablamowicz says, the system does have some limitations in corrosion performance.

"Customers are always interested in new and unique looks," he adds. "There is greater interest in the job coater market for RAL's colors in low and mid-gloss ranges versus the standard 70–80 gloss range. Certain RAL color ranges are also now being offered in textures, which provides applicators with a greater range of options."

Axalta recently released AR400 Champagne Metallic, a bonded metallic color in its architectural color pallet. This features super-durable TGIC-free pigments that meet or exceed AAMA 2604 requirements, and are designed to provide exceptional performance and weatherability to a wide array of surfaces.

It does not require a clear coat, and can be used for both interior and exterior purposes. It is available in increments of 55lb.

Targeted applications include: wheels and motorcycle parts; metal furniture, office furniture, point-of-sales advertising and garden furniture. Architectural applications include: door and window frames, cladding, railing and other uses in construction.

In the near-term future, he concludes, Axalta will continue its push to offer lower cure coatings which break the 300 deg. F curing temperature barrier. Additionally, investigation into nanotechnology and the opportunities it presents will be pursued, since this could prove particularly useful in the area of durability.

As noted above definitions of heavy-duty coatings vary. Brian Coutts, president of Erie Powder Coatings, notes that many customers are actually looking for coatings that can go on a 'heavy-duty' product.

"This might be, for example, heavy equipment such as mining equipment or farm equipment and implements," he says. "These types of uses usually have very stringent and heavy specifications on the parts or assemblies, due to extended wear and tear in the field, and our customers expect the powder to last on these heavy duty parts.

"Thus, with heavy duty, customers are usually looking for products that work in difficult situations where their products, and of course the powder coating covering it, may be well used and even abused. For this reason, adhesion and wearability – durability, scratch resistance, and so on – are most important for these applications.

"The powder coating for these types of situations is very important, including flexibility for example. But often of even more importance, as is true with many applications, is the type of substrate and how it is prepared prior to coating. The pre-treatment steps have a huge impact on durability, which is so important for heavy-duty coatings."

EPC's aims for the near-term emphasize primer coatings and corrosion control. It has focused a great amount of internal resources on corrosion control, corrosion being a huge cost-factor for the metals industry.

"Corrosion control and adhesion promoted by some of these primers and corrosion resistant coatings can have a very beneficial effect on durability," Coutts says, "which is why they can be very important for heavy duty coating applications.

"We've made great gains in this area, and have become the go-to powder provider for custom formulated corrosion control and new solutions to old problems. This area of expertise we have and are developing further goes hand in hand with, and complements, the new

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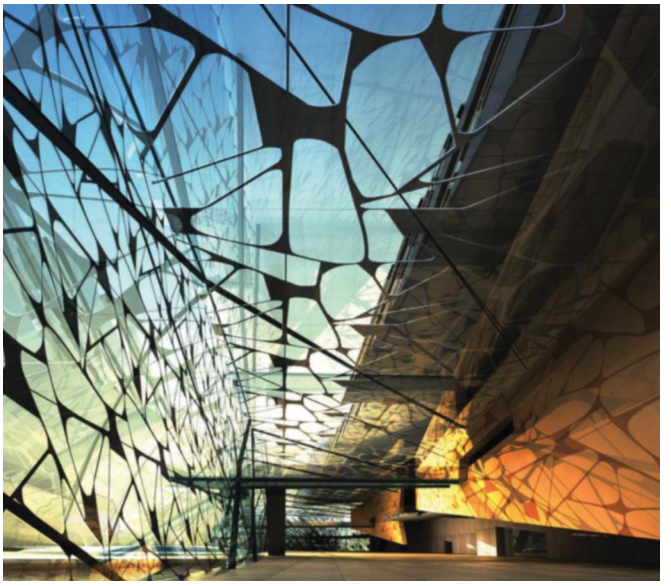

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- 35 manufacturing plants around the world.
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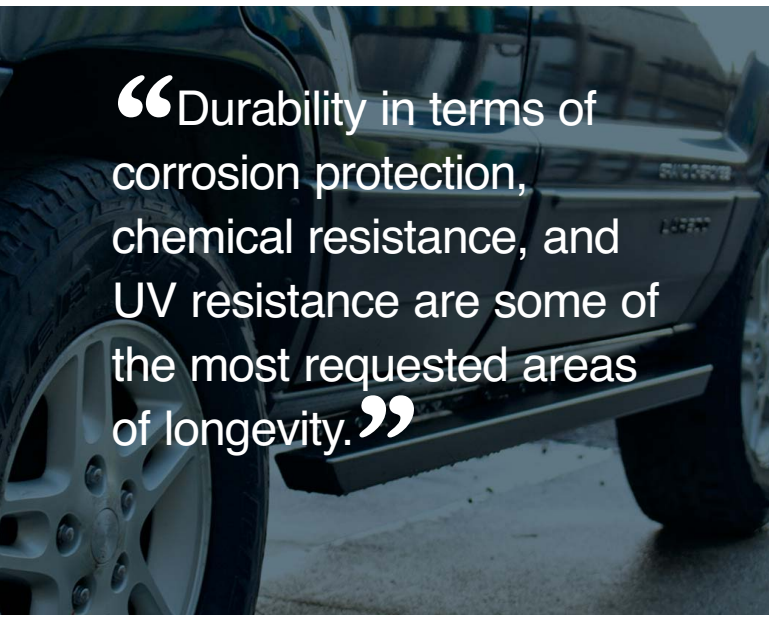
pretreatment systems being put out by some of the pretreatment suppliers."

Most manufacturers are reporting a modest but significant level of growth in North American manufacturing. This applies to powder coating too, obviously, though Coutts cautions against over-optimism.

"Most industries that could have switched to powder coating have already done so," he points out, "so the growth is more organic than the way it was in the 1980s and 1990s when much of the growth was tied to customers moving from liquid coatings to powder. This still happens, but much less frequently now than 10 or 20 years ago.

"Powder is becoming a mature industry, so the technology is changing, but at a slower pace than previously. Our 'hit list' on new technology is really focused on corrosion control, and what part we can play in attempting to save the industry and society in general a lot of money and resources by bringing corrosion control to the table."



"Durability in terms of corrosion protection, chemical resistance, and UV resistance are some of the most requested areas of longevity," says Dan Szczepanik, director of marketing – transportation segments and powder coatings, with Sherwin-Williams Product Finishes. "Heavy equipment or infrastructure are large investments and our customers want the peace of mind that our coatings will protect for the life of the component."

Customers, he adds, want a powder coating system that can save them labor, bake time or bake temperature. These factors add up to total job cost savings, and a coatings supplier has to formulate features for applicators and end-users "to excite the entire supply chain."

Sherwin-Williams most recent production introduction, he says, is its Powdura OneCure. This is designed to address the concerns he mentions, durability and lower job costs.

"Powdura OneCure provides increased edge coverage and increased corrosion resistance while applying a primer and topcoat with one single cure cycle," he explains. "The primer and topcoat can be different chemistries, thus getting the best of both worlds.

"The two coats cross-link and co-react to form a tight inter coat adhesion bond and form one of the best primer / topcoat protection systems available in powder coating. This type of technology is especially interesting to coaters of heavy duty equipment or infrastructure components."

Like other suppliers one future technical development Sherwin-Williams focuses on is driving down cure temperatures.

"When you're dealing with heavy gauge steel," he points out, "it takes longer to achieve the required metal temperature for cure. The lower we can drive this temperature, the quicker we can process parts and the lower the temperature and energy required to achieve full cure.

"Other fronts for innovation are extreme UV durability, increased transfer efficiency and unique pretreatments for use under powder coatings."

As far as future growth goes, Szczepanik sees a compound annual growth rate "in the high six percent to low seven percent range. As countries across the globe realize the need for environmental regulations, powder coatings will be at the forefront of coatings use because of its very small environmental footprint and exceptional performance. If you look at the globe by regions, the fastest growing would be Asia Pacific, followed by the more mature markets of North America and Europe."

Diamond Vogel is promoting its own line of superdurables. These cure at under 300 deg. F, says marketing manager Al Boyer.

"The truck and trailer industry is a major customer for these," he states. "Trucks and trailers need a coating that can withstand the beatings they take day after day."

Adds product manager Rick Achterhof, the coatings use different polyesters to the norm. They cross-link at lower temperatures than is typical."

"They're suited also to large, heavy weldments," he says. "You can cure without oven-baking with the lighter stuff.

"We just launched this reduced temperature product line six months ago It needs less energy to cure, taking just 20 minutes at 275 deg. F."

TCI Powder Coatings is another player in the superdurables segment, notably in the architectural market. Steve Jones, director of national markets, says they are becoming more and more prevalent because the architects want to go greener.

"We see the older architects still staying with the familiar approach," he says, "while the younger ones want to

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go more green. So, they're helping drive this change, by pushing for use of more powder coatings."

"The Aluminum Manufacturers Association has a set of specifications and technology standards for any standard, and that is helping with the growth of super-durables for building exteriors."

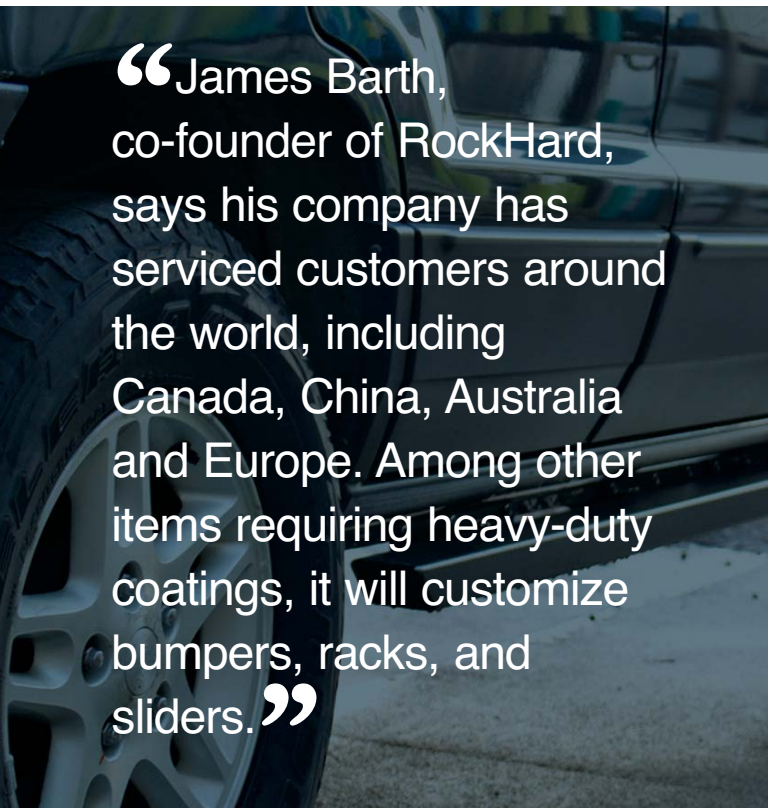
Polyamide 11 coatings have existed for many years, and they continue to be a staple in the mining industry. Rilsan Polymer, however, has been finding that its PA 11 powders are entering new niches in fluid handling, and in certain automotive applications.

"You can actually machine the coating to get an exact finish, to very tight specifications," says Charles Weidner, senior account manager with Rilsan's specialty polyamides business unit.

"It's used in pumps because it has good cavitation resistance. Most PAs absorb water, but our PA 11 does this to a much smaller extent.

"Other people's coatings take on water more than ours does. Also, with some competing materials, you can lose adhesion of the coating to the metal, because of the water absorption. And we can also offer a high-gloss finish for exposed parts."

Rilsan has a focus on fluidized bed dip-coating. This process consists of immersing a hot part into powder suspended by rising air flow. As soon as the Rilsan powder comes into contact with the preheated article, it melts and forms a film on the surface of the component.



"This process produces a consistent thickness, even on parts with complex profiles," Weidner says. "So, we can do internal and external coatings in one operation. The dip-coating process is efficient, with 100 percent transfer, and straightforward."

One prospering niche market for super-durables is off-road vehicles. Customers with the money will buy a standard pick-up and take it to one of the companies that can customize it for enough terrain without violating the manufacturer's warranty.

Vitracoat America Inc. showcased its capabilities in this field with its display at last year's Fabtech show in Las Vegas. Featured on its stand was a Jeep customized by RockHard, of St. Paul, NE.

James Barth, co-founder of RockHard, says his company has serviced customers around the world, including Canada, China, Australia and Europe. Among other items requiring heavy-duty coatings, it will customize bumpers, racks, and sliders. These are rails that go on the side of the vehicle, so that if it becomes stuck on rocks in rough country, or scrapes against them, the driver can escape without damaging the body of the actual vehicle.

RockHard also produces roll-cages that go inside the vehicles, in case they take a tumble in rough terrain, and a broad selection of accessories.

Jeff Govero, who heads technical service for Vitracoat, says the corrosion resistance of his company's products is a key factor in their success in such applications.

"The corrosion-resistant coating can go underneath," he explains, "and on top of that you can add a pigmented layer. That gives you very durable protection."

As the protective properties of powder coatings continue to be extended, such applications are going to increase. Growth in powder costings overall, pegged by most suppliers at around 10 percent annually, means that the toughest jobs will increasingly be taken on by the new generations of powder materials coming into the market. ■

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Howard Marten Fluid Technologies Inc. is the preferred partner of companies across Canada providing our customers with products, services and solutions for your fluid handling, lubrication, coatings, spraying, fluid transfer and filtering requirements. Through our Applied Fluids and Coatings (AFC) and Industrial Lubrication and Process (ILP) divisions Howard Marten Fluid Technologies has your needs covered.

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

Since 1950 Howard Marten Fluid Technologies has been providing high quality products by partnering with great companies like Graco, Nordson, DV Systems, SMC, Bullard, Powerblanket, Veledon Andreae, Goff's Curtain Walls, IST Canablast, GFS, DeVilbiss and Binks products, These relationships enable us to recommend and provide the best components that will meet and exceed customers' requirements.

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Powder Systems Offer Higher Accuracy

New systems for the powder coating spray industry are arriving from a number of suppliers. The growth of powder in general, for its environmental benefits and increasing ease of use, has fuelled steady growth in this sector for several years.

SAMES KREMLIN, which makes the SAMES line of manual and automatic powder coating systems, is currently promoting the InoBell powder bell applicator. This, the company says, offers higher first-pass transfer efficiency, and better uniformity and finish quality.

It can be installed on a robotic or reciprocating system, and is finding use in different industries worldwide. One customer in the office furniture business, SAMES KREMLIN says, is reporting not just the improved finish quality and uniformity, but also a 35 percent savings in powder usage.

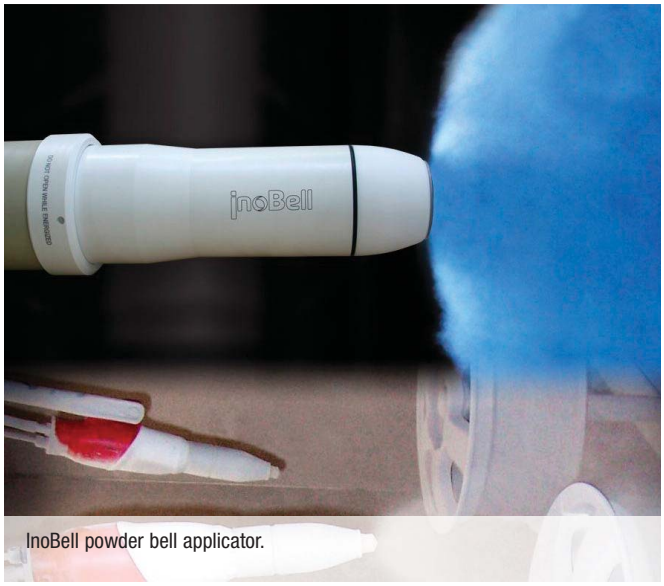
The process is designed to provide 100 percent coverage of the parts, with minimal manual adjustments. It uses fixed automatic powder guns with low powder flow and high electrostatic effect, instead of using guns mounted on reciprocators. It features a reportedly smaller footprint than competing systems, less powder wastage, and lower operational costs, which in turn yield a faster ROI. It can also recycle more powder than competitive booths.

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

Nordson Corp. has introduced the Spectrum Powder Feed Center, its next-generation feed center technology. This, the company says, is a complete, closed-loop powder management system that provides a clean operating environment and optimum powder handling conditions, while reducing operator interaction.

Available in configurations for both venturi and dense-phase (HD) powder application systems, the unit embodies lean process control. It is a closed-loop system, assuring powder containment during operation and color change for a cleaner and safer work environment. The closed-loop system incorporates a variable frequency ultrasonic sieve, fitted as standard, to automatically condition powder and eliminate problematic screen blinding.

Other features include a proprietary cylindrical hopper design and centrifugal high-pressure cleaning to efficiently clean the entire area, eliminating corners in which powder could be trapped, and three level sensors with visual/audible alarms, optimizing powder levels and the flow rate from each gun. Fresh powder is automatically fed in to the



InoBell powder bell applicator.


Nordson's new Spectrum Powder Feed Center installed at a Williams Bros. plant in the US.

After many years of working together in the same group, KREMLIN REXSON and SAMES have decided to increase their synergies by merging within the EXEL Industries Group. The new company name is **SAMES KREMLIN**.

The merger brings together two market leaders with talented and tenured employees building on the proven success of their existing alliance, uniting innovative technologies, with common cultures and values that are completely customer focused.

The new CEO of SAMES KREMLIN, Cédric Perres, will lead the global development of the organization following these strategic lines of action:

- Making manufacturers more competitive with a wide range of products, solutions, and services while delivering enhanced performance.
- Bonding, Protecting, Beautifying are our focused missions in any industrial process worldwide.
- Addressing industrial issues with technology and expertise, we will provide Innovation with an efficient Supply Chain to deliver the right solution to the right place at the right time with a focus on Customer Satisfaction.

Strategic Highlights

Create a global leader - the new company will deliver a wider range of products, solutions, and services

Accelerate growth – a broader portfolio of products and solutions will increase innovation, improve execution, reduce costs, and enhance customer success.

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We have also launched our newly designed global website: **www.sames-kremlin.com**. The new design allows for streamlined menus, clear navigation, and a responsive layout for all platforms with improved structure of our content.

Our new global website reflects our global offering of six product ranges and solutions with different value propositions:

AIRSPRAY - "Since 1925, we have been an Airspray manufacturer bringing you the very best in finishing."

AIRMIX® - "Since 1975, creator of Airmix® technology, we provide the perfect mix between quality and productivity."

AIRLESS - "We provide premium Airless Products for finishers with demanding applications."

REXSON Dispense - "Pumping beyond possible, dispensing precisely."

ELECTROSTATIC Liquid - "Electrostatic expertise for high finishing quality & efficiency."

POWDER - "Powder coating solutions for the highest Productivity since 1960."

For more information, please visit our website or contact our Marketing department at marketing@exel-na.com

system, direct from the box, to support any production run and further reduce operator intervention.

A digital touchscreen interface guides the operator through the color change process, reducing error and skill dependency. Tool-free operation provides a simple and intuitive process for every operator on every shift. All powder management and system controls are consolidated in one place, reducing factory footprint and enhancing operator ergonomics.

Spectrum Feed Centers are available in configurations that utilize two different pump technologies. The Spectrum VT Feed Center is designed for venturi-based systems, while the Spectrum HD Feed Center supports dense-phase powder coating application systems.

The VT Feed Center features an in-line venturi pump design for uniform powder flow. Its pump and purge assembly, the company says, guarantees complete cleaning of the entire powder circuit. High-performance cleaning of the pumps, guns and delivery hose speeds color change and improves coating repeatability. The Spectrum VT can accommodate up to 36 venturi pumps.

The HD Feed Center integrates Nordson's HDLV dense phase pumps for precision dispensing and color change control. HDLV pumps, Nordson says, provide advanced features, including a patented dual chamber design for consistent powder flow rate over time, and linear and proportional powder output on demand, while consuming less air, passing along savings in energy consumption. There is a reported maintenance-free operation up to 2,000 hours for true, lean process control.

Italy-based **Eurosider** has a focus primarily on gas technology, but this has led it into the field of power coating. Bill Robinson, a partner in the company, says it is pushing a conversion from compressed air to nitrogen, which he says is more efficient because it results in a faster process.

"The 21 percent of compressed air that is oxygen changes the humidity," he says. "There is also an optimal temperature for powder coating that is cooler than you usually have with compressed air.

"Nitrogen is chilled. We put a negative pulsating charge on the nitrogen, and that virtually eliminates the Faraday Cage effect that you often see with powder."

The result, he says, is a savings of between 20 and 30 percent savings in powder. The system has been available in Europe since 2012, and since 2015 in North America.

"It's very good for aluminum extrusions," he notes. "We can get a much more uniform finish. And we can bring the nitrogen-generating unit into your facility and test it. The unit is not that heavy, so it can be moved quite easily."

The process, he adds, is all about obtaining a more uniform flow and distribution. It extracts nitrogen from compressed air using a membrane.

The GX8500A system, features the GX132 powder gun.

Parker Ionics' Pulse Power system is well established in powder coating. According to national sales manager David Underhill, it is now in its third generation.

This version, the GX8500A system, features the GX132 powder gun, which Underhill says is the lightest currently on the market. It weighs just 480 gm.

"Our engineers have combined this lighter gun body with an ergonomic design," he says. "This significantly reduces operator fatigue."

Additionally, the Super Pulse Power advanced corona-charging technology features three pulse-width modulation cycles. These are optimized for the most widely used powder coating conditions: flat or simple shapes, Faraday cages, and recoats.

"The simple push of a button switches between these settings," Underhill says, "This gives the operator total flexibility and control over the powder coating process."

As well, a user can program up to 250 individual recipes if needs in the plant dictate this.

The GX8500A includes the company's Dual Air Control system. Each controller can be configured for either total air and percentage main, or independent main and sub-air, giving the operator the choice of using whatever system is preferred. Gun cable length in all cases is seven meters, with five or 10 meters as options.

Gema's new vertical reciprocator ZA13, marketed in combination with the new gun axis UA04, is claimed to offer perfect coating results for complex application tasks and difficult object geometries. The ZA13 has a loading capacity of up to 100 kg, and can be equipped with maximum of six gun axes of type UA04.

The UA04 axis has a maximum stroke-length of 2200 mm. It is therefore well designed for the coating of big parts.

The modern drive technology of the UA04 axis, the

Gema – The Global Leader in Powder Coating Technology

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

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

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

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

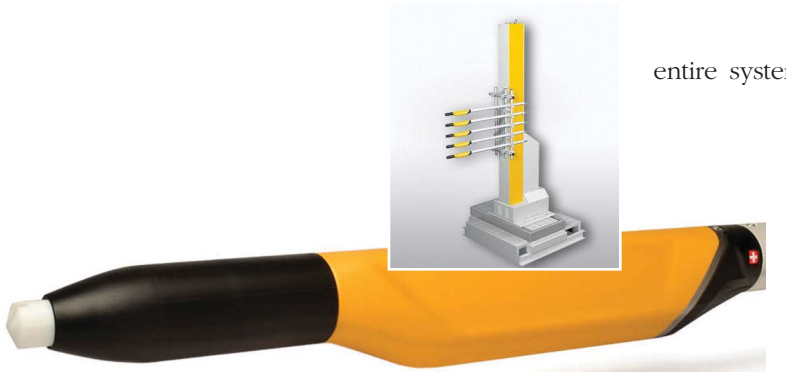
Gema's Magic Series® quick color change booths are designed to handle a large variety of colors and guarantees extremely quick and clean color changes. All of this without any mechanical cleaning tools or entering the booth!

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

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

The Gema North America office offers direct sales and distribution support in Canada, the United States and Mexico.

To learn more about product offerings or obtain assistance in determining which equipment is best for your operation, visit www.gemapowdercoating.com, email Powdersales@gema.us.com or call 800-628-0601.



Gema's new vertical reciprocator ZA13.

company says, with its servo motor and toothed belt transmission, allows for pinpoint feed motion of the automatic guns, as well as high dynamic of the infeed movement. As a result, complex parts can be coated in a high quality finish, and challenging application tasks solved optimally.

Other product highlights are the integrated cleaning function of the guns via blow-off for a clean working environment, and the compact and space-saving design of both axes. The axes can be programmed with the Magic-Control CM30/22 control unit, and can be integrated into the control system via Bus-/CAN-bus technology.

Gema's most recent gun design is the OptiGun. This offers a powerful 100 kV cascade, while the advanced electrostatic controls reportedly ensure the highest transfer efficiency, even with challenging powders.

The inside diameter remains constant, and the transition between the different parts of the gun is very smooth. These features prevent powder depositions inside the gun and facilitate the cleaning procedures.

Wagner has always had a focus on complete control systems for powder coating. The Wagner PXS system is designed to manage the complete coating system, as the entire system control is already integrated in the switch cabinet and operating via the central touch-screen.

The compact design permits space-saving and ergonomic integration of the system into the individual working environment of the customer. Because of its diverse functions, which enable a high degree of automation as well as an efficient powder application, this system is particularly suitable, the company says, for challenging coating tasks with varying demands.

There is a fresh powder supply coming directly from the powder box, or from a Big-Bag. There is vibration and fluidization of the powder for ideal powder preparation, and a change of collector nozzles takes only five seconds.

An optional ultrasound sieve reduces entry of dirt, and the system permits automatic optimization of color change processes. There is an integrated powder consumption documentation feature, and the system is integrated with the PEM-X1 Corona manual gun.

The PEM-X 1, Wagner says, "combines balance, maximum service life and optimum handling. Its balanced ergonomics ensure flexible and fatigue-free operation.

It is another competitor in the lightweight field, weighing just 490 gm. It offers a homogeneous and stable powder cloud, and even layer thickness distribution.

There is a quick-release coupling for the powder hose. This makes the paint change easier and quicker.

And of course, not every gun or system used in powder coating is an OEM product. In some cases, a simpler, more generic product fits the bill.

Powder Parts Inc. supplies powder guns that use a recently adopted design of electrode, and a nozzle that maximizes the charge and the transfer efficiency. Company president Grace Vargas says the company's approach offers a cost advantage over OEM prices, in part because it allows Powder Parts to control its costs better.

"We're growing because of this, and since we manufacture in North America, everything we offer is UL-approved. This isn't always the case, especially with some imports from Asia."

While there are no firm figures, she estimates North American growth in powder coating as being easily 10 percent every year.

"It's an industrial process that is a very cheap and efficient way to finish runs on a large scale," she says. "It's easy to adopt. You have no environmental regulations to deal with, besides normal fire and powder content rules."

Powder Parts is based in Elgin, IL, but has an extensive customer list in Canada as well as the US. ■

General Automatic Transfer is a turnkey manufacturer and supplier of Industrial Finishing Systems. This includes Washers, Convection Dry Off and Curing Ovens, Infrared Gel or Curing Ovens, Batch Ovens, Conveyor Systems, and Powder Coating Rooms.

Standard Washer Features:
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- Lifetime Warranty on washer housing against rust and corrosion
- Tanks, heat exchangers, drain boards and conveyor rails also available in stainless steel
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- Quick disconnect risers and spray nozzles
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- Highest heat transfer on the market
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- Manifold utility connections

Applications:
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- Belt washers
- Dip or spray/dip applications
- Drum washers

Standard Oven Features:
- 6" thick 4# mineral wool insulation
- Multi-zone heater control
- Proprietary Air Seal Design
- VFD controlled exhaust fan
- Bottom up Air flow design
- Roof, end or side mounted burner location

Applications:
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- Elevated, bottom entry
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- Batch Ovens with 18 standard sizes

Standard Powder Coating Room Features:
- Three inch thick polystyrene encased panels on both sides by impact-resistant. FM Global approved metal clad sheet with an insulating value of R17
- Temperature controlled
- Powder storage areas
- Three inch thick insulated ceiling
- LED Light Fixtures
- Polycarbonate observation windows
- Single & double width personnel doors and automated roll-up doors

Standard Conveyer Systems Features:
- Custom designed layout
- Engineered support style for floor or ceiling support
- Application specific

Applications:
- Overhead monorail & Power and free
- Lean Power and Free
- Mesh belt
- Chain/crossbar
- Wicket type
- Drum type

Standard Batch Ovens:
- 36 Sizes
- PLC Controlled
- Competitively priced

Applications:
- Liquid or Powder
- 8-10 Week lead time

Standard Gas IR Ovens:
- 12 Sizes
- PLC Controlled
- 4-6 FPM

Applications:
- Boost or Gel
- Quick color change

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New Approaches in Stripping

Older technologies for cleaning racks and hooks are being augmented with new thinking.

Photo: Chemetall.

Hooks coming out of the stripping process.

Stripping is the part of the paint and coatings business that nobody likes much. It isn't directly productive, it requires time and expenditure of energy (meaning money), and if it's done carelessly, it needs to be repeated. It is not a make-or-break process in most plants, but it does require care and seems to offer little direct benefit.

It's little wonder, therefore, that companies needing to remove paint and other coatings are always looking for faster, less energy-intensive stripping systems. There is therefore an ever-broadening search to settle on easier and more efficient stripping systems.

One new approach is from Allied Powder Coating, based in Houston, TX. The company's method uses an inverse electrostatic method.

"We reverse electrical polarity," says chief technical officer Joe Zhang. "The electricity affects the coating, but not the metal hook."

At this point, the method, demonstrated at last year's FabTech show in Las Vegas, is being used solely for hooks. The technology is proven, Zhang says, but there are some phases of development to complete before its scope can be expanded.

"The system uses no other chemicals, " he says. "There is no burning happening, there's no dust, and no smoke.

"You could say our system works from the inside of the hook, not the outside."

A newcomer in the field in North America is the Danish firm Clemco. Its process, also shown at the last FabTech, has an automated system that uses a blasting approach to stripping.

"We use a normal, standard robot to perform the staging process," says general manager Frederik Nielsen. "This is carrying the blast nozzles in a special pattern, according to how you want to strip."

Suitable stripping media can include steel grit, copper slag, aluminum oxide, glass beads or plastic granules. The latter, he says, are used a lot for aerospace parts, since they do not damage to the surface beneath the paint.

Because Denmark has adopted wind turbines extensively, Clemco has broad experience with cleaning systems for the towers and nacelles (not the blades) used with these. It has acquired a substantial database on the specific corrosion processes that occur.

" You do need a reasonable volume to make the robots worthwhile," he states, "and we are offering a turnkey process. We prepare a complete factory layout, and locate booths, ventilation systems, equipment, robots, and conveyor lines.

"The system requires controlling the robots' motion on a conveyor – the tracking is complex, so you need to program the conveyors. We do the conveyor layouts with local companies that manufacture them for us."

Clemco Industries has been active in North America for some years, and has worked extensively in South America. However, the stripping system is a new offering on this continent.

Another Scandinavian entry into the stripping field comes from a Norwegian firm, RPR Technologies. In this case, induction rather than blast media or reversing electrical polarity is used.

"The induction disbonder works by the principle of induction," the company says. "Heat is generated in the steel substrate, and the bonding is broken.

"The coating is then removed entirely without disintegrating and completely free from contaminating agents, i.e. blast media. This obviously makes disposal and recycling of waste easier and cheaper. Even inside the pittings and cracks in the surface the coating is disbonded."

An extension of this method, the Green Tank project, is designed to develop and launch a robotic system based on

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Corporate Description

Since 1987 Mighty Hook has specialized in the design, manufacture and distribution of stock and custom hooks, racks, and high temperature masking products for the coating industry. We have a staff of engineers to design custom hanging and masking solutions for those customers with unique requirements. Mighty Hook's products and services can be accessed by phone, fax, from our catalog, or though our interactive website.

Markets Served

Mighty Hook customers include some of the largest OEM and Job Shop coating operations in North America. We design complete hanging systems for large scale coating operations and engineer innovative custom solutions. Our extensive stock program is designed to handle the majority of the requirements of the coating community, and will benefit any size or type of coating operation.

Products & Manufacturing Capability

Mighty Hook maintains one of the largest inventories of stock hanging and masking products in the world. Standard hanging products include hooks, racks/crossbars and load bars. Our standard masking products include tape, disks, plugs and other high temperature products.

Angle Pivot® Products

Our patented Angle Pivot Hanging System allows for closer rack spacing on conveyor lines allowing a more solid wall of finishing, increasing productivity by 50% on conveyors with 30° inclines or declines. These unique products attach to existing conveyors to create closer rack spacing and increase coating efficiency. The net effect is a 15-50% decrease in required space for hanging relatively "flat ware package" products.

use of RPR's patented induction heating technology for environmentally friendly removal of coatings in storage tanks. The project is co-funded by the ECO-Innovation initiative of the European Union.

Chemical stripping, of course, is still a key method favored by many users in the paint and coatings industry. In particular, it allows for formulating versatility, to remove even the more durable coatings with little effect on metallic substrates.

One of Guspro's Byco burnoff ovens.

Chemetall's Gardostrip removes residues from a variety of metal substrates such as steel, galvanized steel and aluminum. It is produced as a range of processes, adapted to specific regulatory, health and technical environment.

"We offer a variety of processes," the company says, "such as non-methylene chloride, N-methyl-2-pyrrolidone-free, alkaline, thickened, and solvent-based paint stripper technologies.

Whatever you require, we can offer you a broad variety of chemical paint strippers that suits your needs."

The broad range of surface treatment technologies can be customized to accompany the complete paint stripping process.

Among the non-chemical processes, oven heating is one of the best established. The Bayco line from Guspro Inc. uses heat that rises from the firebox chamber to process the load at an evenly controlled temperature. Coatings then thermally degrade into a dry dust that requires no special disposal.

"All toxic fumes are contained in the process chamber," the company says, "and flow directly into the afterburner for destruction. Stack emissions are free of harmful pollutants."

Heat cleaning does not employ any direct flame impingement with the product. Heat flows evenly throughout the load to bring the product to temperature, and ttemperatures are accurately controlled to prevent over-heating, using microprocessor-based digital controllers and redundant over-temperature safeties.

The Bayco bottom firebox design ensures even heat distribution throughout the load and an efficient cleaning process. At the end of the process, there are no toxic substances needing disposal.

Pollution Control Products offers burn-off ovens for paint stripping. The company describes itself as the pioneer of pyrolysis, having entered the field in the early 1970s.

The ovens use a patented system that anticipates and prevents overheating. The ovens have a highly sensitive control system for added protection and operational flexibility.

Located in the afterburner stack, this sensitive system monitors the rate of smoke emission from the parts by measuring the stack temperature. When the stack temperature reaches a preset point, the stack controller turns on a water spray mist to cool the parts, lowering the smoke emission rate before it reaches an ignition state. The water spray also activates if the oven temperature exceeds its set-point temperature by 30 degrees.

A back-up water spray activates should the water spray nozzles become clogged or malfunction in anyway. Additionally, a manual-reset high-limit temperature controller turns off the primary burner if the oven temperature controller should fail.

Steelman Industries is another producer of burn-off ovens. These feature patented technologies such as top down heating, rate-of-change control and automatic process control.

"All burn-off ovens include a patented venture diffuser technology," the company says, "used to distribute heat in the oven and dramatically reduce the temperature of hot gas entering the oven, ensuring that valuable parts will not be overheated."

There is also a patented rate-of-change control, which allows Steelman ovens to process large amounts of material quickly without a fire hazard. It actually measures vapor production inside the oven and controls it at a safe level.

The afterburner gets to temperature quickly and maintains 1,500 deg. F to 1,800 deg. F for more than a half-second, to meet current and expected future air quality standards. All the company's ovens have an afterburner temperature indicator.

There is also an automatic process control, designed to make oven operation totally automatic without operator input or the chance of error. This package includes an automatic cycle timer, a three-level safety system, and a cool-down circuit.

Fluidized beds have been used successfully for many years, but one concern is the amount of space they take up. Dinamec Systems LLC is still in the late development phase of a new fluidized bed, but a key feature will be its small footprint.

The company was starting to promote this at shows last fall. A company spokesman said development had been continuous over the past three years.

Dinamec specializes in fluidized sand bed technology. It estimates that 95 percent of its business is in this area.

There are numerous variables a paint or coatings shop has to consider in buying its stripping system, and no easy one-system-fits all formula to follow. But in today's market, the choice of technologies is extensive, and there is a method for every plant needing one. ■

Essentra Components is a global business that manufactures and distributes millions of small but essential components. In January 2014, Essentra Components America was formed when three companies, Alliance, Reid Supply and Richco Inc., joined together.

Essentra, an abstract name, was specifically chosen to capture what our business manufactures and supplies. We provide components, which often play a critical enabling role in the products of customers. Our international network extends to 29 countries and includes 42 principal manufacturing facilities, 64 sales and distribution operations, and five research/development centers.

Under the Alliance brand, Essentra Components America has been manufacturing and distributing high-temperature masking products for over 40 years. We stock more than 1,300 masking parts at locations in Toronto and Edmonton, AB, as well as regional distribution sites in the United States, Mexico and Brazil.

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Essentra High Temperature Masking

Our complete high temperature product range includes masking caps and plugs, tubing, tapes, discs and metal hooks. Multiple material options we have the exact product to fit your budget and product requirements.

Straight masking caps provide excellent sealing for studs and tube ends and can also be used as plugs when inverted. Plugs with first thread protection have an ergonomically-friendly pull-tab and provide masking to the first thread of standard female threads. Masking caps and plugs are available in premium silicone (600° F), cost-effective EPDM (475° F) or recyclable paper (400° F).

We manufacture high temperature soft PVC vinyl caps and plugs (425° F) in over 375 different sizes. Vinyl pull-caps are an economical solution for one-time uses and are also available with an ergonomic finger pull-tab for easy removal.

Masking tapes and discs are available in several materials to withstand temperatures from 325° F to 500° F. Essentra green polyester tapes and discs are the industry standard for excellent heat and solvent resistance with no shrinkage, and are available in width/diameter up to 6".

Essentra silicone tubing (600° F) is an excellent solution when parts are too long to be fully covered by standard caps. This versatile tubing is flexible to fit several size ranges; conforms to irregularities, masks through holes, and can be cut to length and cut long for an easy pull-tab.

Cold-drawn spring steel hooks come in six styles including three styles of square bar stock hooks. Our range of hooks holds up to 220 lb, with designs to accommodate parts with varying thicknesses, maximum load bearing and repeated usage.

For lower temperature curing or shipping protection, Essentra Components supplies thousands of standard caps and plugs in nylon, polypropylene and polyethylene. Shop all Essentra products online or request a free Master Catalog featuring over 1,000 pages of protection and finishing components.

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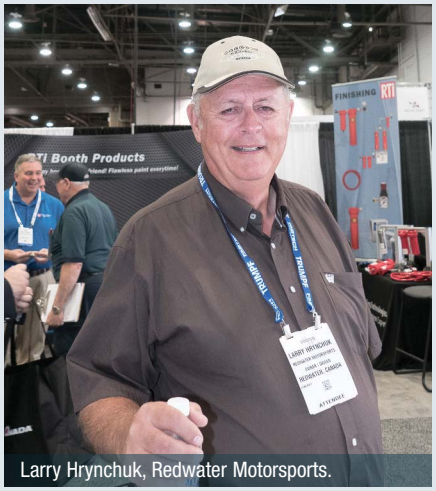
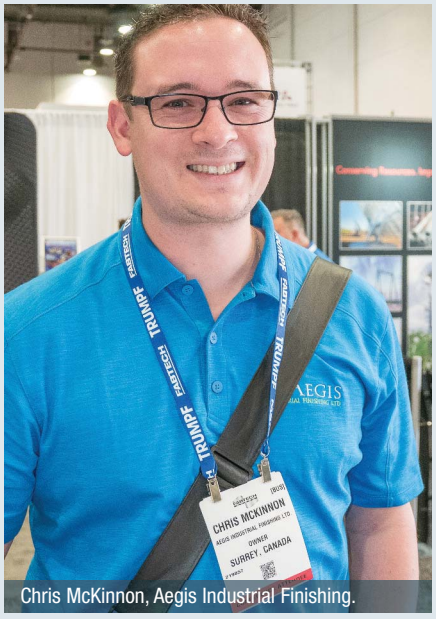


Larry Hrynchuk, Redwater Motorsports.



Chris McKinnon, Aegis Industrial Finishing.

Michael Reinerth, Vanessa Ades, David Hart, Mark Lazurus and Jeffery Jouett, Protech Powder Coatings.

Greg Taylor, Gema.

Jim Guirl, Dan Guirl and Aaron Hughes, GAT.

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BEX has manufactured and sold industrial spray nozzles and tank mixing eductors for over 50 years. Customers around the world rely on BEX for knowledgeable people, responsive delivery, consistent quality and flexible solutions.

Our customer support team is experienced in asking the right questions to help customers make the right decision - the first time. We've established an industry-leading reputation for shipping orders quickly because we have standard items in inventory - and our made to order standard is two weeks.

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BEX manufactures in Ontario at a state-of-the-art facility using the highest quality materials. We achieved the ISO 9001 registration in 2008 and proudly maintain those standards. BEX serves customers around the world from sales offices in Canada, the United States and Germany.

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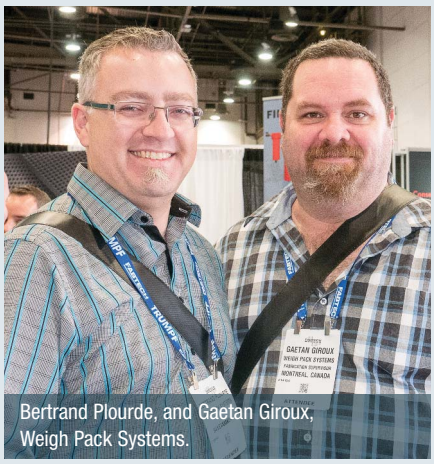
Brad Andreae and Lizabeth Bjarnarson, TTX Therma-Tron-X

Matt Schmidt and Jesus Guerrero, Carlise Fluid Technologies.


Bertrand Plourde, and Gaetan Giroux, Weigh Pack Systems.


Gary Efronson, Fischer Technology.

Roland Sanchez, and Jordan Mosby, Pollution Control Products.

Tony Varda, Björn Greiff , Aris Rollins, Thomas Düsel ,IGP Powder Coatings.

DeFelsko Corporation, a leading U.S. manufacturer of inspection instruments, offers a variety of instruments to meet to coating industry's needs. Below is a summary of the new additions to the PosiTector and PosiTest line of inspection instruments.

Duplex Coating Thickness Gage

The new PosiTector 6000 FNDS probe simultaneously measures and displays the individual layer thickness of zinc and paint in a duplex system. When taken out of duplex mode, the instrument can be used as a conventional coating ferrous/non-ferrous gage to measure the thickness of coatings on all metals.

Low voltage pinhole detector

The new PosiTest LPD Low voltage Pinhole Detector uses a wet sponge to detect holidays, pinholes, discontinuities and other coating flaws on metal and concrete substrates without damaging the coating. Supplied in a rugged inspection case, the lightweight, ergonomic PosiTest LPD includes everything needed for testing. Features include four regulated voltage output options and GroundSenseTM to visibly reassure the user that the instrument is properly grounded.

Soluble Salt Tester

The new PosiTector SST Soluble Salt Tester measures the concentration of soluble salts on metal surfaces. The PosiTector SST is the first conductivity probe designed specifically for the Bresle Method and is compatible with any Bresle Method patch, including the innovative new PosiPatch™ and the economical DeFelsko Adhesive Patch. Features include an intuitive step-by-step interface that guides users through the Bresle Method, an onscreen timer to report test duration and automatic computation of surface density of salt.

The PosiPatch uses a magnetic ring for attaching to steel surfaces and leaves no adhesive residue to clean. Sharp needles are replaced by safe, flexible dispensing tips and air is automatically removed through a watertight, air permeable membrane saving time.

Shore Hardness Durometer

The new PosiTector SHD Shore Hardness Durometer measures the indentation hardness of non-metallic materials such as polymers, elastomers and rubbers. In the corrosion industry, durometers are commonly used to ensure proper curing of pipeline repair wraps. Two models are available for different hardness ranges – Shore A and Shore D. Features include a digital display, a user-adjustable measurement time with onscreen countdown and an Auto Ignore mode.

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

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Email: techsale@defelsko.com Web: www.defelsko.com

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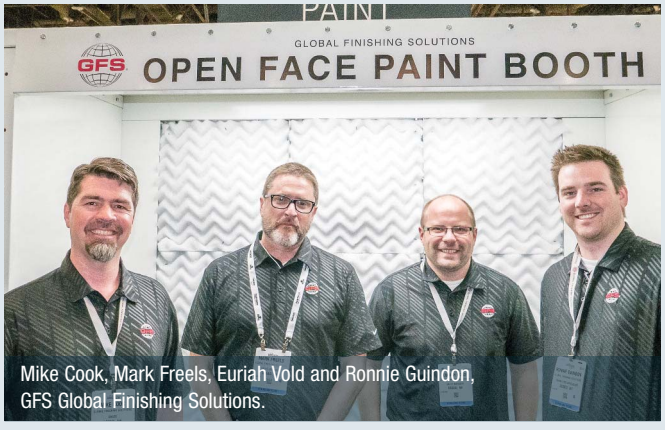
Henric Fagerlind, Mike Bertrand, Colin Hammacott, Hedson Technologies.

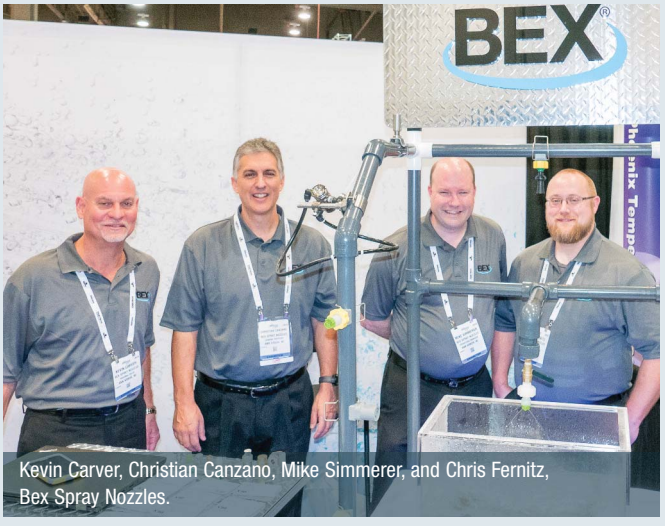

Monica Sluys, Guspro/Bayco.



Mike Cook, Mark Freels, Euriah Vold and Ronnie Guindon, GFS Global Finishing Solutions.

Terry LaRue, David Beamish, Jody Wenzel and Eddie Waters, DeFelsko.

Chris Martinson, Dan Kentch, Alexandre, Descoteaux, and Stephane Girardin, IST International Surface Technologies.



Kevin Carver, Christian Canzano, Mike Simmerer, and Chris Fernitz, Bex Spray Nozzles.

Rhonda Joslin, Mickey Richard, Kevin Higgins, Regan Murray, Jean Murray, Herve Sadones, Michel Bresolin, ST Rajan, SAMES KREMLIN and Ian Chandler, Premier Finishing Solutions.

Samantha Paulson and Ross Hancock, Dinamec Systems.

Carlisle Fluid Technologies (CFT) globally designs and manufactures a complete range of finishing equipment focused on powder coating, spraying, pumping, mixing, metering, and curing of a variety of coatings used in the transportation, general industrial, protective coating, wood, specialty and auto refinishing markets.

With a history spanning 375 years in combined experience, five equipment brands are designed and built to provide finishing solutions with long-term value. Customers involved in challenging finishing applications in particular, and the industrial marketplace overall, will benefit from advanced technologies — from DeVilbiss® atomization, to Ransburg® electrostatics, MS Powder coating equipment and systems, BGK® curing and controls, and Binks® atomization and fluid handling.

- DeVilbiss is recognized as the global leader in high quality atomization for industrial finishing and has been providing innovative solutions to spray finishing problems since 1888. DeVilbiss designs and manufactures a broad range of finishing equipment and productivity solutions for the industrial market including spray equipment, disposable paint cups, air filtration, and contamination control products. For information about DeVilbiss, visit www.devilbiss.com.

- Ransburg invented the electrostatic process and continues to lead in the design, manufacture and marketing of electrostatic finishing equipment. For information about Ransburg electrostatic equipment and finishing operation services, visit www.ransburg.com.

- MS Powder designs and manufactures customized powder coating systems and components. Powder coating offers an environmentally-friendly, economical solution for harsher environment surface applications. New formulations have opened the use of powder on a greater variety of substrates. For information about MS superior system design, consultancy and new product development, visit www.msnews.ch/en.

- BGK has expanded IR curing technologies for over 30 years and today is known as the leader in coating curing solutions utilizing high intensity electric infrared. For information about BGK curing and material handling solutions, visit www.bgk.com.

- Binks pioneered the development of liquid spray finishing technology over 100 years ago and continues to set the global standards for industrial finishing in both atomization and fluid handling. For information about Binks, visit www.binks.com.

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Radiation Curing Keeps Developing

UV units at Superfici's Concord, NC laboratory.

Ultra-violet (UV) light curing, along with electron-beam (EB) technology, is a field where significant technical gains are still happening. Whether it's using LED systems, downsizing the equipment or opening up areas for development that were considered too difficult a few years ago, companies supplying the field are in a confident mood for trying new concepts. And as the technology evolves, technical targets become clearer.

Key factors aiding its growth are sustainability – any undesirable emissions are minimal – and, as improvements come into the market, reduced energy consumption. Additionally, both ease of use in the plant and higher productivity are increasingly offered.

"One direction in which we're improving our UV systems is higher performance, which just means more UV radiation from one lamp," says Rudolf Eickhoff, technical CEO with Venjakob. "The other point is increase of lifetime, and reduction of heat radiation, so that we can be open for new challenges."

A challenge that such improved systems can address is the cost of the more sophisticated systems. Such improvements, Eickhoff says, can lower the capital costs for users of UV equipment.

"Our system is modular," he adds. "We can add it to existing lines; but this is not the main requirement of our customers." Other technical goals he sees include increase of radiation output; a reduction of workpiece temperature; a reduction in ozone emissions; longer equipment lifetime; and a shift to mercury-free systems.

Certain markets for UV systems are still emerging. These, Eickhoff says, include the automotive market for scratch resistance coatings; protection coatings after digital printing; and the building industry, especially the façades of buildings made of fiber boards.

The dimensions of UV dryers are seldom a concern for customers, says Murat 'Moose' Sezen, Canadian sales manager with Superfici.

"We have found that the size of the actual UV dryer is not an issue," he says. "The unit needs to be at a certain dimension to accommodate the work pieces of the customer. Where the customer would like to see a reduction in footprint is the size of the electrical cabinet."

In Canada, he notes, the wood flooring sector is strong. The shift he sees in this market has been to narrow the line layouts.

"Traditionally, the average line layout would be 1350mm wide," he states. "We have seen a shift to narrow lines that are 650mm (24 in.) as more of the flooring man-

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ufacturers have seen their batch size production decrease.

"The goal for many is to have a couple of narrow lines that are geared to quick color changes, or sanding effects. We are finding more requests coming from kitchen cabinet manufacturers as this sector continues to make the transition to waterbased coatings."

Superfici maintains a lab in Concord, NC. Customers can send samples to this and have the company run them, to check for attainable results or potential problems.

Phoseon Technology (Hillsboro, OR) is another company putting stress on mercury-free curing systems. Product marketing manager Joe Becker says UV LED curing light sources have been proven to support trouble-free press operation compared to traditional mercury lamps. There is no warm up time required and less down time due to the instant on/off of UV LED.

"The technology offers higher consistent yields and reduced waste compared to traditional UV curing," he says. "With no moving parts, the maintenance is minimal – there are no reflectors to clean or shutters to replace."

LED curing systems can process a variety of materials, including thin and heat-sensitive substrates, at maximum production speeds with low-input power, he adds. UV curing has the ability to accomplish tasks that cannot be done with ARC lamps due, in part, to high temperatures, ozone damage and radiation risk.

Due to the low curing temperatures of LED, it is possible to coat materials such as pine and other resinous woods with significantly lower reject rates. For example, if the surface of a pine board exceeds 50 deg. C, the scrap rate increases significantly.

"Users report," he continues, "that LED light sources produce better cures and better adhesion on a wide range of materials. The longer wavelength output—such as the UV-A range seen from UV LEDs—penetrates through thick and pigmented systems producing through-cure of the material that ensures surface adhesion and the ability to cure pigmented wood coatings."

Customers working in the UV curing field are always seeking smaller, more powerful and less-expensive products, Becker notes. Incremental improvements in Phoseon's existing products and the release of new products aim to meet these requirements.

"Through Reliability Engineering testing, Phoseon continues to increase the reliability, repeatability and consistency of its light sources," he says. "Phoseon is exploring new solutions for networking/connectivity, as communications between devices becomes more sophisticated.

"Also, Phoseon has partnered with some of the largest ink manufacturers to produce and improve inks that will replace the need for ARC lamps and can be used in industries where ARC lamps were never a viable solution. With compatible material formulation, UV LED curing units have become more efficient in delivering higher energy to the media thus driving not only increased throughput and process flexibility but also environmentally friendly and energy efficient solutions."

Many Phoseon products, he says, are scalable, which gives the end-user the flexibility to create custom length solutions and offers exceptional optical uniformity for consistent and reliable curing. Additionally, there is an ongoing move to reduce the equipment footprint.

"Manufacturing floor space is valuable in all markets and reducing the footprint of our light sources continues to be a major requirement for our customers," he says. "With Phoseon LED, coating machines can be made more compact as a result of smaller form factor light sources and because the number of lamps required can be reduced by up to 50 percent in many applications. UV LED light sources can be used to build more compact coatings lines, with shorter production paths, which minimize waste. For example, larger ARC lamp curing ovens can be replaced by LED light source stations with smaller footprints." There are various end-use markets that benefit from UV curing, a key one, as noted above, being wood finishing. UV LED curing technology, Becker says, is ideally suited for applications such as edge coating, roller coating and digital printing of wood. Additionally, wood panel manufacturers have seen the benefits of replacing UV arc lamps with UV LED lamps in several deployments in the US and Europe.

"The electronics industry continues to grow and UV LED curing technology is well-matched for electronic assembly applications," he adds. "The unique combination of high-energy UV LED sources with the appropriate coatings provides increased productivity, while also providing the ability to cure heat sensitive materials.

"UV LED curing solutions are being rapidly adopted for curing adhesives in factory assembly lines throughout the world. Small electronic components may be sensitive to heat; the low operating temperatures of UV LED lamps overcomes those heat-sensitivity issues."

The automotive industry tends to use UV LED curing solutions for paint and coating touch-ups, window and sunroof seals, among other applications. In particular, the lightweight materials used in today's automobiles benefit from the low temperatures enabled by UV LED technology.

"Applications for industrial coatings continue to emerge. The need for high-speed curing of coatings and colorings of the finished products is ever-growing," Becker points out.

"And industrial processes have unique characteristics. They are typically delivered in large volume with a need for process consistency. UV LED curing lamps are an ideal fit for these requirements as they can be built in various configurations (lengths, widths, irradiance intensity) and well as monitored through industry-standard means to ensure consistency." ■

Photoinitiators
Expand Applications

UV photoinitiators are in a class of their own among paint and coatings additives. Their functioning varies according to the end use and the particular chemistry required, and the field is expanding at a rate that means there are always new things to learn, and new technology coming into the market.

According to Mike Idacavage an adjunct assistant professor at the University of Syracuse, who specializes in the subject, photoinitiators (PIs) are necessary to absorb UV light or electrons, to form active species, which are either radicals or acids. The different types of PIs will absorb UV light at different wavelengths.

"They only react with UV energy, not with heat," he says. "They act to join monomers and oligomers to the growing polymer chain, creating a high molecular weight network."

In the photoinitiation process, the system is irradiated with UV, and it is the PI that absorbs some of the incoming energy, forming one or more free radicals as it does so. This free radical

then combines with an acrylate to form a new radical that is the active species for the growing polymer.

"UV polymerization is line-of-sight only," Idacavage points out. "Shadowed areas very hard to cure."

PIs, he adds, can be a factor in both initiation and termination. If PI concentration is too high, the radicals from it can contribute to a high termination rate.

"This in turn can lead to greater levels of unreacted material," he says. "In other words, you getpoor physical properties, such as low adhesion, greater marring, or poor tensile properties."

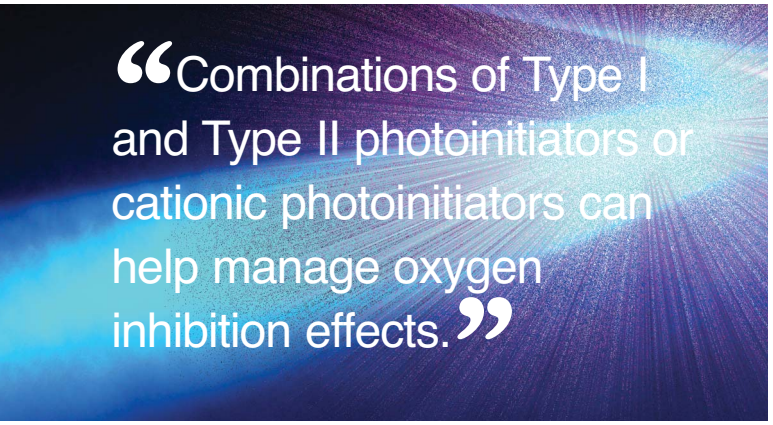
There are, of course, several classes of PIs. An a-cleavage PI adsorbs light and fragments to form the radicals that initiate polymerization. A hydrogen abstraction PI adsorbs light and abstracts hydrogen from another molecule (a photoactivator) that produces radicals. And an amine synergist (another photoactivator) donates hydrogen to the photosensitizer to produce the radicals that initiate polymerization.

" Photoinitiator, photosensitizer, and photoactivator are often used as different words for photoinitiators," Idacavage points out, "even though they are not the same."

Liquid blends are easier to handle in a plant, and many equipment operators prefer them. However, they tend to be more expensive than other options.

That said, PI blends offer advantages in absorbing energy over a larger range of wavelengths. This gives a better chance of avoiding interference from pigments, and makes use of more of the available UV energy. For optimal results, many coatings producers will opt for a combination of PIs to provide both surface and through cures.

Other factors to consider in selecting materials include the absorption characteristics of the photoinitiator and the formulated system; the type and degree of pigmentation



needed; the spectral output of the UV lamps; oxygen inhibition processes and weatherability. Also, since there is a toxicity factor to consider with PIs, formulators will want to consider this in their work.

One of the key developments, of course, has been the arrival of LED UV lighting systems. These can eliminate the need for mercury-using lamps, as well as substantially reducing temperature factors in the process. However, they do modify the requirements in PIs.

IGM Resins, which bought BASF's 's Lucirin, Darocur and Irgacure product lines in 2016, has capitalized on the former owner's extension of the potential of LED-UV systems.

The Darocur and Irgacure ranges are all, IMG says, products of the alpha-hydroxyketone family. They are preferred as part of a PI package when curing unpigmented clear coatings, or for surface curing in highly pigmented systems.

For through curing of thicker sections and for highly pigmented systems, an acylphospine oxide type of photoinitiator such as the BAPO and monoacyl phospine oxide (MAPO) families is suggested. BAPO-type PIs are especially designed to be activated by longer-wavelength UV light in the near-visible region above 400 nm. Light of this wavelength penetrates deeper into the lower layers of the coating, thus enabling the through curing desired.

Shorter-wavelength light, around 230 nm, is of higher photon energy but is less penetrating than that of longer wavelengths. Light of this shorter wavelength is particularly useful for surface curing. Moreover, BAPO-type photoinitiators also allow UV absorbers to be formulated into the coating for improved outdoor durability.

In addition to their through-cure properties, BAPO photoinitiators photobleach after UV exposure, to give a clean white appearance in contrast to an off-white color associated with other long-wavelength absorption photoinitiators. Selection of the best individual photoinitiator or combination depends on a number of variables including the chemistry of the resins system (UPES, epoxy acrylate, urethane acrylate), selection of monomers, UV lamp type and orientation, curing speed required, coating properties, substrate and many more.

Talking on behalf of BASF at UV.EB West, prior to the asset sale, company researcher Dr. E. V. Sitzmann pointed out some of the changes that are happening as a result of the widening use of LED UV systems.

"They use 395 nanometer curing," he pointed out. "This allows low temperature curing, since it has no IR output. LED systems are potentially more reliable, as well as using no mercury.

"They're potentially less damaging to substrates and colorants, and they're economically attractive compared to laser light sources."

In the coatings industry, he continued, they often provide what is largely a drop-in replacement for older style UV lighting systems. However, direct replacement of LED arrays for Hg lamps (or lasers) may work only for certain applications.

"PI selection is even more critical for LED curing," he said. "Also, the effects of oxygen and the appearance of low color after curing is a challenge with LED curing. Another challenge is that the traditional paradigm of PI blends targeting surface and through-cure needs realignment, since traditional PI combinations usually do not work."

LED light flux is typically lower. Additionally, reformulation of resins and modifiers could be needed. Pigments, which can cause interference through optical overlap, might have unexpected effects on curing of coatings. Despite these challenges, UV-LED curing applications for industrial inks and coatings are growing. "The 'best' photoinitiator for UV LED curing depends on the application," he said. "In some cases it is a drop-in replacement to conventional UV lamps, in other cases more work is required.

"For 390 – 405 nm LED, a good fit is with photobleachable photoinitiators, like BAPO.

Combinations of Type I and Type II photoinitiators or cationic photoinitiators can help manage oxygen inhibition effects."

Spectra Group Ltd. has extended its own line of PIs, for both conventional and LED UV systems. Its H-Nu 605 IL liquid blend PIs are designed for easy addition to water-based free radical formulations, initiating in the UVA (380 nm) and visible/near IR portion of the spectrum (605 nm).

The H-Nu 470X product provides tack-free cure (acrylates) in UVA/visible light range and are capable of sensitizing both iodonium and sulfonium salts in UVA/visible range. The antimony-free H-Nu 390 product is a further offering, and there are both antimony- and benzene-free H-Nu 390JI liquid blend cationic photoinitiators.

The company will provide photoinitiator samples as testing kits, to include all necessary co-initiators and co-solvents. ■

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DSM NeoResins acrylic and styrene resin, alkyd emulsion, solvent-based resin, polyurethane dispersion (PUD), vinyl and acrylic emulsion (Haloflex), moisture cure polyurethane, blister pack resins, crosslinkers, UV oligomers and monomers
Halox corrosion inhibitors, tannin stain inhibitors and flash rust inhibitors
Indulor Resins for graphic arts, solid resins, resin solutions and colloid emulsions
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Keep an eye out for the Dempsey Industrial Seminars happening across Canada in June 2017.
This is a technically focused educational event presented by expert technical staff from many of the industrial companies represented by Dempsey. An event not to be missed!

Antimicrobials
for Paint and Coatings

Using antimicrobials in paint and powder coatings is a balancing act. On the one hand, customers appreciate the use of additives that suppress unwanted odors, and inhibit the growth of mold or mildew on a painted surface.

And on the other hand, antimicrobials and other biocides that can accomplish this are necessarily toxic, and are heavily regulated. A Dow Chemical report in 2016 outlined some of the issues facing suppliers and formulators in this field.

"Biocides have been impacted significantly by recent regulatory developments in both Europe and the United States," the report states. In the EU, "the new 'allergen' label phrase (EU H208) was introduced. This phrase indicates that a chemical mixture (including formulated products, such as coatings) may cause sensitization via skin contact."

While European regulations might seem far from North American realities, the fact remains that regulatory authorities in many countries coordinate their efforts today. Thus, a move in one jurisdiction will, sooner or later, be considered in any other developed country. And while Canada has its own regulatory structures, it does try to coordinate these with other nations, notably the US, because of the two-way flow of both ingredients and finished goods across the shared border.

According to Craig Waldron, manager of global marketing for building products with additives producer Lonza, the trigger concentration for the EU H208 phrase was deliberately set lower than previous hazard communication thresholds. This was done in order to protect the percentage of the European population that is already sensitized to a substance.

"The lower trigger concentration for sensitizer hazard communication is causing a major shift in biocide use patterns in the EU," he stated, "particularly for paints containing the preservative CMIT (5-chloro-2- methylisothiazolinone), and recently MIT (2-methyl 3-isothiazolinone) preservative systems have been coming under pressure as well."

In addition, Paul Kappock, a senior consulting scientist at Lonza, noted that biocide usage in the EU would be affected by Article 95 of the Biocidal Product Regulation (BPR), which took effect on September 1, 2015.

"Biocidal products consisting of, containing, or generating a relevant substance cannot be made available on the EU market if the substance supplier or product supplier is not included in the Article 95 list for the product type(s) to which the product belongs, except existing stocks of products not on the list, which can be used until exhausted," he explained.

There is no guarantee that products on the list will stay on the market, however. A determination of inclusion will be made for each, and those with negative decisions will no longer be approved for sale. Those with positive decisions will be subjected to guide- lines and restrictions for their use.

In the US, EPA re-registration eligibility decisions (RED) have affected use of certain biocides as preservatives in paint that function via formaldehyde-based mechanisms, Waldron said, and there is concern about others that are coming up for review in the near future. Paint formulators are thus challenged to replace these biocides with new chemistries.

Globally, Waldron added, "The trend toward VOC-free coatings is creating the need for improved biocidal protection systems, particularly wet-state biocides, because reduction of the amount of coalescents used in water-based coatings reduces their ability to control bacterial growth. This results in the formation of softer coatings, which are more susceptible to dirt pickup and airborne organisms, such as fungi and algae."

He also noted that there is an increased demand for dry-film preservatives in low-VOC, exterior coatings: "We believe that as a major consequence of these trends, there will be fewer options for preservatives and greater use of preservatives with more than one active agent and, as a result, the overall cost to preserve paints and coatings will likely increase."

Dow Microbial Control's primary product offerings in the field of in-can and dry-film biocides, including Bioban 200 Antimicrobial and Rozone 2000 Mildewcide. These, Dow says, re two cost-effective products based on ultra-low leaching chemistry for long-lasting dry film protection. In addition to extended dry film performance, they offer additional protection against algae and a boost to in-can preservation.

Rozone is based on Dow's DCOIT technology (dichlorooctylisothiazolinone). These products, the company said, offer not only dry film performance, but also additional protection against algae and a boost to

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

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For more information please visit the Performance Chemicals page of our website, buckman.com.

in-can preservation.

In addition to a robust preservative package, it asserts, good industrial hygiene is vital to protect paints and coatings from microbial contamination. A combination of good housekeeping, manual cleaning, and biocide treatments can help to minimize sources of contamination from the manufacturing facility. Dowicil QK-20 industrial antimicrobial is a fast-acting solution to decontaminate your plant and equipment, clean up raw materials and wash water, rework contaminated products and knock down bacteria in finished products.

Lonza's principal product offering is its Proxel range. This can be used in latex emulsions and aqueous based paints, as well as metalworking liquids and aqueous mineral slurries.

Canadian Lonza distributor Chemroy states that "Surface coatings require dry film protection when applied on external walls to protect them from microbial contamination incidence. This is necessary due to environmental conditions like high humidity and UV light.

"The inadequate addition of dry film preservatives will lead to discoloration, caulking and flaking of exterior paint film." Lonza also offers its Omacide as an antimicrobial for interior and exterior latex paint.

Clariant's Industrial & Consumer Specialties unit has focused on improving compatibility between pigments and base resins, but it is also looking at antimicrobial formulations. It offers a technology based on the inorganic composite of silver chloride with titanium dioxide, which it says delivers a preservative providing truly beneficial properties. The active substances are silver ions, which interact with the microorganisms resulting in a range of effects from growth inhibition and loss of infectivity to actual cell death.

Other suppliers provide pre-formulated antimicrobials, such as Biomaster, which says its formula is easily added to any water, solvent, oil or powder-based coating or lacquer to give effective and lasting antibacterial protection. It inhibits the growth of harmful bacteria and minimizes the threat of cross-contamination, which can be vital in hygiene-critical environments such as hospitals, care homes, food production lines, kitchen areas, dental or veterinary practices and schools.

"For effective protection against the development of harmful bacteria" the company says, "a wall or ceiling finish must be impervious, easy to clean, hard wearing and free from joints or seams – otherwise they can encourage bacterial growth by providing infectious reservoirs. Biomaster treated antimicrobial paints and coatings are completely resistant to bacteria and mold, preventing odors and making them more hygienic and durable."

In high traffic or public environments, the company adds, contact points such as door handles, bathroom fittings and even floors could be treated with Biomaster to help protect against cross-contamination.

Wales-based SteriTouch offers a paint additive it says has been independently proven to prevent the growth of bacteria for 10 years. It also offers ongoing protection against black mold and algae.

"In many cases," the company notes, usage "can be as straightforward as mixing the additive into the paint to achieve a long lasting antimicrobial effect, and solutions are available for most coatings. Through our partnerships, we are also able to supply pre-validated paints for most applications, from domestic emulsions through to highly resistant scrubbable acrylics for very demanding environments such as operating theatres."

The company's additives are produced for gel and liquid coatings, used in swimming pool linings, automotive leathers and HVAC applications. Additives for inks, lacquers and varnishes are also available to offer a protective finish to materials such as leather, plastics, wood and concrete. ■

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

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

characterize the global market leader for chemical distribution.

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ConnectingChemistry

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

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

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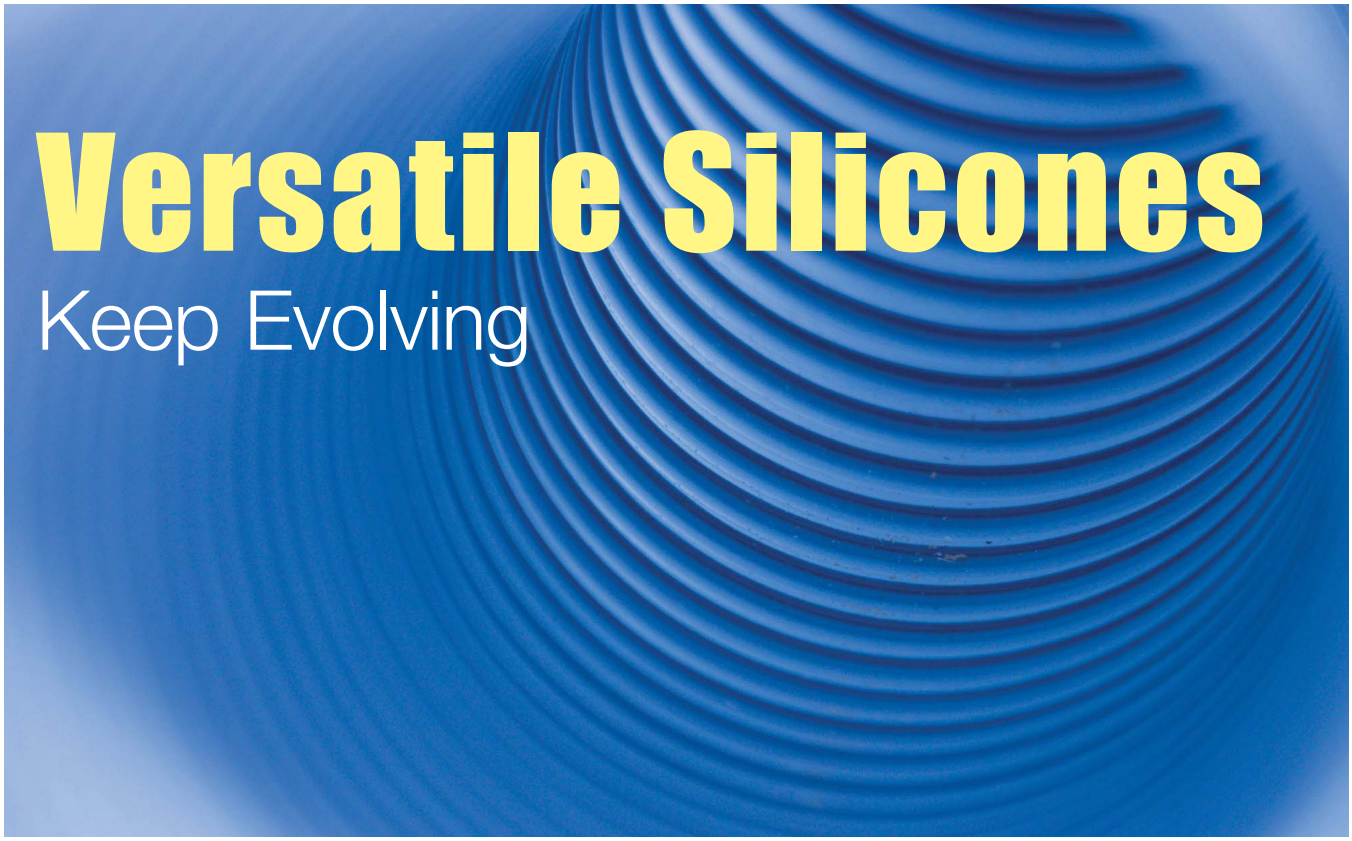
Versatile Silicones

Keep Evolving



Bluesil™, Bluestar Silicones Hoses & Tubes, close on the inside of a tube using silicone based technology.

Silicones are not the cheapest of protective materials, but they meet the requirements of a broad range of applications. Their ability to tolerate high temperatures and other extreme conditions means they find their way into many niches where other materials do not offer sufficient durability.

> "Water-based, solid flake, and 100 percent silicone liquid silicones enable formulators to reduce the VOC of their formulations."

Silicones are all, chemically speaking, polysiloxanes. They are inorganic polymers, based on chains built around silicon rather than carbon, as in organic polymers.

They offer resistance to high temperatures as well as being UV-resistant. This suits them to exterior uses as well as for paints employed in some industrial applications, where large amounts of heat are generated.

Additionally, combining a fluorine-using molecule with a silicone provides a high-value coating that resists staining. Many anti-graffiti coatings use fluorosilicones.

Bluestar Silicones, represented in Canada since July 2016 by L.V. Lomas, produces an extensive selection of silicone materials. While the product offerings are primarily aimed at the oil and gas and personal care markets, there is also a selection offered for the coatings field, where water repellency is a key sales point.

Bluesil ADD 11013 is a polyether-modified polydimethylsiloxane that is for use in solventless paints and varnishes, and in water-based paints and inks. Bluesil BP 9800 is an aqueous APE-free polymethylsiloxane resin emulsion, employed in facade coatings, to optimize the balance between water repellency and water vapor permeability.

Bluesil BP 9878 is an aqueous polymethylsiloxane resin emulsion. This emulsion provides two fundamental properties of the silicone technology to the paint film: water repellency and permeability to water vapor.

Bluestar Silicones is a $650-million worldwide silicones raw material manufacturer, based in Lyon, France. It has more than 60 years of expertise in silicones.

Dow Corning's silicones range is immense, which is

understandable given the company's long experience in the field. It provides silicones to improve the durability of paints and coatings, as well as to help resist corrosion, electrical discharge, moisture, and extreme temperatures.

As well as being highly resistant to weathering and the sun's UV rays, they enhance gloss and color retention, and are compatible with many organic resins.

"Additionally, they can be applied to almost any material or surface," Dow points out. "Water-based, solid flake, and 100 percent silicone liquid silicones enable formulators to reduce the volatile organic content (VOC) of their formulations."

The company provides them as solid flake, as solventless liquids, and as solid flake resins for formulating decorative paints and high-performance coatings. They are also used as elastomers for architectural coatings.

Master Bond supplies one and two-component fluorosilicone adhesives, sealants, gasketing, and potting compounds. These protect against erosion and corrosion, and withstand exposure to oils, fuels, solvents and other aggressive fluids.

These products, the company states, have good mechanical strength properties and bond well to many different substrates, including glass, silicone rubbers, stainless steel, titanium, aluminum and many plastics.

Fluorosilicone elastomers feature enhanced performance capabilities, and can resist outdoor weathering and rigorous thermal cycling. They also have high elongation upon cure, and exceptional high/low temperature serviceability.

In many instances, Master Bond says, in addition to outstanding durability its fluorosilicones can provide excellent dielectric characteristics and absorb shock, vibration, and impact. These solid products contain no solvents or diluents. Non-flowing and flowable formulations can be conveniently dispensed from tubes and syringes.

Siltech, which has plants in Toronto and Mississauga, ON, is another company offering fluorosilicones for coatings applications. Its Fluorosil OH C7-F is a fluorinated hydroxyl-functional silicone that provides stain resistance, flexibility and slip to urethane, epoxy and other coatings. And Fluorosil ACR C7-F is a fluorinated acrylate functional silicone that provides stain resistance, flexibility and slip to UV-based coatings. its

The OH C7-F grade, the company says, is a liquid fluoroalkyl and alkylcarfunctionized silicone based on non-PFOS fluoroalkyl chains. The fluoroalkyl pendant reportedly gives excellent softness and slip, while the carbinol offers reactivity for substantivity and improved performance. The special properties of Fluorosil OH C7-F result in benefits such as solvent, stain, mar and fingerprint resistance; flexibility; lubricity; softness and slip.

The primary hydroxyl group provides reactivity with moieties such as isocyanate, epoxy and esters. The molecule migrates to surfaces, and reacts into the matrix giving improved properties and substantivity. In the absence of groups with which it can react the OH provides hydrogen bonding to surfaces again providing substantivity.

> "Combining a fluorine-using molecule with a silicone provides a high-value coating that resists staining."

Fluorosil ACR C7-F is an acrylate ester. The company says it offers the same benefits in UV cured acrylate systems or free radical polymerization processes.

"Recommended usage level is between 0.2 – 5.0 percent by weight of the formulation," Siltech states. "Slip, softness, lubricity and mar resistance require only the lower end of the use level range while stain and fingerprint resistance and flexibility benefit from higher use levels.

" We have screened Fluorosil OH C7-F and Fluorosil ACR C7-F against other additives in five different coatings systems. In all, these gave the best balance of stain, fingerprint and mar resistance, slip, cost, and compatibility even over additives with a much higher amount of fluoroalkyl content built onto the backbone. There seems to be a synergy between the fluoroalkyl and the silicone parts of the molecule resulting in improved properties."

In July of last year, Siltech announced it had commissioned a new 1,500-sq m warehouse at its Mississauga facility. This warehouse featured, according to company president Dag Enhorning, the latest fire suppression and safety features.

A second expansion, completed recently, phase expands the existing manufacturing plant, and houses an additional five 20,000 liter stainless steel and glass lined reactors, bringing the total annual capacity to over 25,000 tons.

"With strong growth in North America, Europe and Asia," Enhorning said, "this expansion is necessary to meet our customer's continued demand for our products." ■

> "There seems to be a synergy between the fluoroalkyl and the silicone parts of the molecule resulting in improved properties."

Aluminum Anodizers Council

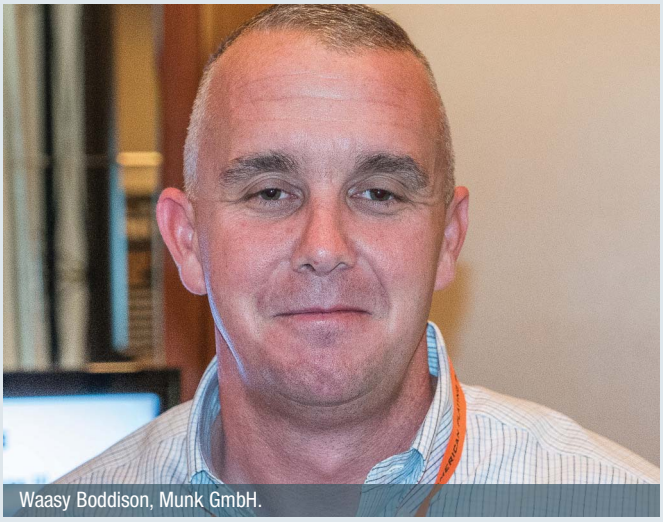
The Aluminum Anodizers Council held their 30th Annual Conference and Exposition in Montreal, Quebec, October 4-6 2016.

Photos by Brian Jones

Jason McGahey, Dynapower Company.

Raulf Daube and Kevin Hewett, North American Rectifier.

Greg Jessup, NTS Northern Technical Solutions.


Waasy Boddison, Munk GmbH.

Mark Thede, Precision Process Inc.

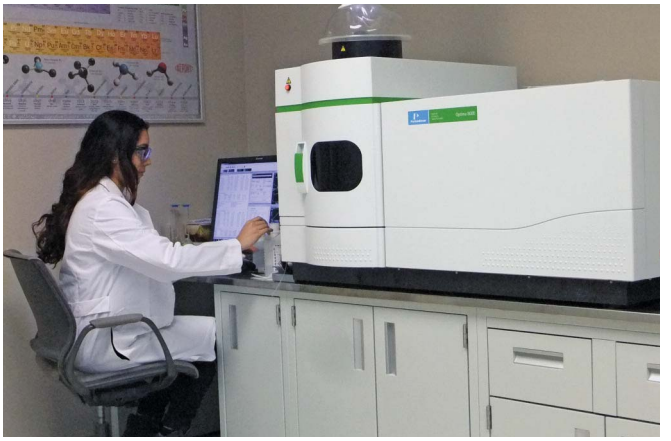
NTS Northern Technical Solutions was founded in December of 2007; we started operations on January 1 of 2008.

The company is based in Guelph Ontario where our laboratory and offices are located.

NTS, Northern Technical Solutions is a supplier of proprietary chemicals to the aluminum finishing industry in Canada.

NTS Northern Technical Solutions success is based on high quality products at reasonable pricing and with exceptional service. Our team is knowledgeable, dedicated and willing to put in the extra effort to support our customers.

We define service as delivery of a quality product on time, the technical knowhow and ability to communicate this knowledge to the customer, laboratory analysis of customer's products, training in plant and technical schools at NTS, Northern Technical Solutions facility and being there when the need arises to support our customers.



NTS Northern Technical Solutions has warehouses in Ontario, Quebec, Alberta and British Columbia for reliable on time delivery, we maintain the products that are sold in each region at these facilities.

We moved into a new facility in June of 2014 to accommodate the growth of our company, we hired a laboratory technologist to handle the influx of analysis and to do more product development in 2015.

Since its inception NTS Northern Technical Solutions has grown in sales by 75%.

Controlling Temperature in Plating

An immersion heater unit from Titan Industrial.

Temperature regulation is an ever-developing field. It reached a certain plateau with the standardization of microprocessor-based units, but there is always room for improvement. And there are also the issues of cost and durability to watch for, even when the technology itself is proven viable.

Baker Technology Associates, which specializes in rack and barrel plating systems, says it makes energy-conserving designs its specialty. State-of-the-art controls are integral to this.

"By minimizing losses from heated tanks," the company says, "and dramatically reducing exhaust cfm (often by more than 80 percent), we deliver significant savings in recurring heated make-up air and energy consumption, especially in the northern US and Canada."

The company exclusively uses Aucos control systems and has done so for 20 years. All its control systems offer production scheduling, advanced real-time simulation, verification of layout and capacities, and optimized concurrent processing of widely varying process recipes and dwell times.

Additionally, unlike some scheduling systems, there is no need for part/fixture storage or a queue. The controls are available in UNIX, LINUX and Windows platforms.

Baker's patented Platexpress System, the company says, provides a more consistent finish with lower operating costs. It also offers a hybrid system that uses many of the Platexpress features, but with a traditional barrel/hoist orientation.

Baker also offers in-barrel drying. Unlike conventional, centrifugal drying, the company states, with this more delicate parts need not be dumped into spin baskets for placement inside the dryers.

Following a final on-line rinse, the barrel is conveyed to semi-vacuum dryer stations featuring special, minimal rotational cycles. The barrel dryers are available with automatic covers, to minimize energy losses.

Price Walgren, a division of George Koch Sons, LLC, specializes in controls tailored to customers' individual product, process and throughput requirements. The company says it maintains extensive in-house capabilities, in both the US and Asia, for the engineering and implementation of these.

Process control is through Allen Bradley, Siemens or Omron, controls. However, Walgren also partners with Aucos, GPR and Kempe Software Solutions, which specialize in controls for anodizing, plating and specialty finishing systems.

"These partnerships allow Walgren to most effectively meet clients' unique needs for speed, flexibility and documentation," the company says.

Titan Industrial Heating is a specialist in, among other areas, autocatalytic nickel plating. This is better known as electroless nickel plating, and is performed in a heated tank.

"The ideal heating system heats the solution quickly, usually in two to three hours," the company says. "We have gas fired or electrically heated designs for polypropylene tanks, stainless steel tanks and double boiler tanks."

There is a range of heating methods for electroless nickel plating, and the style of controls adopted is affected by the choice a plating shop makes. Polypropylene tanks, for example, usually use immersion heaters, as do many stainless steel tanks.

Alternatives include a configuration of pump outside, heater inside; pump outside along with heat exchanger; pump outside and grid steam coils inside; or pump inside and filter outside. In addition, Titan says, some plants have the pump outside and a tube heat exchanger, or an outer tank of stainless steel in a 'double boiler' tank, with gas heating.

The company also offers systems for black oxide plating, or blackening, which is is used to add mild corrosion resistance to ferrous materials. This is usually performed at 290 deg. F in electrically heated or gas-fired metal finishing tanks.

"The sheath material for the immersion heaters for black oxide plating tanks should be 316 stainless steel, derated to 10 WSI (Watts per sq in.)," the company says. "This application has a high solution evaporation rate; we therefor recommend an L-shaped or bottom immersion heater. Over-the-side immersion heaters can also be used."

In each case, controls technology has to be specified carefully, to match the tank capacity. A liquid level control is strongly recommended for this application. ■

Coating Thickness Measurement and Material Analysis with FISCHER

Monitoring the thickness of your coatings can potentially save tens of thousands of dollars in costs. Today, different applications require different test methods. Fischer is an innovative leader in the field of high quality measurement technology. FISCHER has a solution for every industrial measuring application such as hand held and bench top coating thickness gauges ideally suited for measurements of paint, powder coating, plating and anodize to X-ray fluorescence instruments for coating thickness measurement and material analysis. Other measurement methods include Coulometric, Beta-backscatter, Nanoindentation, Conductivity, Porosity testing (Holiday) and more.

Surface preparation of substrates is essential before applying any coating. Measuring and recording the peak-to-valley depth created by an abrasive cleaning method is quick and repeatable with the Fischer Surface Profile Probe and FMP series of coating thickness gauges. A separate cable allows for readings to be taken in hard to reach areas and the surface profile and coating thickness probes can be easily interchanged. This dual capability instrument is an ideal tool for measuring blasted surfaces.

More and more, demanding measurement applications require highly qualified technical support. Fischer helps its customers to meet these challenges through its applications laboratories. Qualified applications engineers and technicians from multiple locations provide personalized sales and service to customers in US, Canada and Mexico. We are also available to provide onsite support including set-up, maintenance and calibration. We can help you solve your measurement dilemmas and determine which instrument will be the right fit for your application. Our instruments and standards are serialized and certified to ISO 9001 (optional ISO 17025 is available).

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Hexavalent Chrome

Substitution Quest Continues

Chrome plating is changing, but its uses remain widespread. Photo: Arlington Plating

For chromium suppliers, this year is the one when the European Union bans hexavalent chrome for all but a specified list of functional parts, where there is no viable alternative. North America is also concerned about minimizing hard chrome, and while legislation is less stringent, chromium emissions and toxicity in processing remain a critical issue.

The key problem, of course, is that there is no economically competitive alternative to hexavalent chrome in most cases.

"The relatively low cost of plating with hexavalent chromium still remains probably its greatest attribute," says Collin Peters, North America business manager, functional chrome and electroless nickel, with Atotech Canada Ltd. "That will be the greatest hurdle for the alternative technologies to overcome before they are seriously considered. This is especially true for the largest volume applications such as plating automotive shock and strut rods."

Many of the alternative technologies struggle, he adds, in meeting all the same characteristics that are produced with a deposit plated from a hexavalent process. This includes things like hardness, corrosion resistance, friction properties, and so on.

"Most alternative technologies are able to meet a subset of these characteristics," he says, "but not all. The exception to this is the trivalent options coming to market, as the end result is still a deposit of chromium with the same or similar engineering properties that we've come to expect."

As far as significant cost factors in switching to trivalent technologies, he states, these

are mostly related to the new equipment requirements. An equipment setup for plating with hexavalent technologies can often be as simple as just a plating tank, or at most a relatively simple pretreatment sequence.

"The equipment setup for plating with trivalent technologies will look much more like what we commonly associated with a decorative nickel/chrome plating line," Peters says. "It will be one which contains multiple cleaner/activation steps as well as a nickel strike. Where there is limited capital available, this added equipment requirement may limit some from easily making the leap in technology."

The regulatory issues, however, do not come anywhere near signalling chrome's demise. Its protective powers against corrosion, as well as it incomparable brightness, mean it has a long run ahead of it yet.

"The growth areas that we see at this time in North America," Peters says, "are in the automotive applications, and also oil and gas as that industry slowly rebounds from the lows of the last two years. Many also anticipate a positive impact for the chrome plating market in North America as a result of the REACH regulations currently being finalized in Europe, where the use of hexavalent chromium is undergoing specific authorization for continued use.

"That authorization is widely considered to be assured, but it will be subject to continuous review periods moving forward. The perception in the industry is that global OEMs may slowly begin to strategically consolidate plating operations outside of Europe in order to add more security to the supply chains."

Brad Durkin, director of international product development with Coventya Inc., also sees nothing on the immediate horizon that is ready to challenge chromium's dominance. From an electroplating perspective, he says, a viable, non-chrome approach doesn't yet threaten Cr(VI).

"There are HVOF (high-velocity oxy-fuel) coatings, PVD (plasma vapor deposition), NanoCobalt-Phosphorus alloys and electroless nickel composite coatings that have replaced chromium in some specific applications," he says, "but these have not threatened the existence of chromium, since none of these technologies can do completely what chromium deposits have done, nor do their applications."

However, Durkin points out, there are research projects in the final stages of implementation with Cr (VI) replace-

Dynamix is the largest Canadian owned manufacturer and supplier of metal finishing chemistry, supplying automotive, aerospace, RoHS, ELV, WEEE and REACH compliant metal finishing products across North America. Partners Dennis Rogers, Charles Morris and Stewart Tymchuk established Dynamix in 2007 and over the years the business has adapted to the needs of industry. Together they share over 75 years of metal finishing experience in real-world plating facilities, which provides customers with a tremendous operational advantage. The company recently celebrated its 10th anniversary with a celebration for clients at the Air Canada Centre in Toronto. The founders' combined knowledge of technical service, research and development, manufacturing, ISO 9001:2008, marketing and sales, enables Dynamix to provide high quality products and cost-effective opportunities to all customers.

Our Philosophy

"The philosophy at Dynamix is simple – enhance our customers' performance and profitability, while dealing with all of our partners in an open and honest forum."

Main Focus

The primary focus of Dynamix is the design and manufacture of specialty chemicals for the metal finishing industry, covering all aspects of metal finishing from anodizing to zinc plating. Toll blending, packaging and distribution of custom formulated products are also available.

Distributing Partners

Dynamix understands that from a research and development perspective you can never be the best at absolutely everything. For those areas, Dynamix has partnered with some of the industry's best supply houses. Distributing products for their partners allows supply of a wider variety of chemistries, including automotive and aerospace approved products.

Our Strength

Dynamix's strength is in zinc plating, as it has well over 200 zinc lines presently in service across North America. What sets it apart from the competition is their ability to do their own research and development and manufacturing here in Canada.

Dynamix offers a service that encompasses all its values with a highly skilled and motivated team. The laboratory at Dynamix is well equipped and able to provide analytical solutions specific to a particular sector of industry and/or customer.

The company has two locations, Markham, ON, and Montreal.

Products are designed to provide unsurpassed performance and solution economy. Superior chemistry is only the beginning, as the company realizes technical and application knowledge are just as vital to the metal finishers' success.

Let Dynamix demonstrate how to maximize your plating chemistry productivity by providing the most robust chemical processes available.

Ask a representative at Dynamix about the full line of proprietary products or enquire about a custom blended product. All products are developed with your business success in mind.

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ment technology approaches that will challenge what has been the state of the art, realized over nine decades with hexavalent chromium since the birth of chrome plating in the 1920s.

"As a plated coating," he suggests, "chromium deposits will likely never go away completely since there are still today just too many proven applications and benefits offered by this metallic deposit. Additionally, finding alternative systems that fully meet REACH or other regulatory demands remains a challenge."

That said, there are several systems today formulated with trivalent chromium chemistry, and designed for numerous applications, that offer viable alternatives to hexavalent chromium. And this is really the target by the many regulations in the industry.

"The benefits of trivalent chromium systems have been gaining momentum over the past 15 or more years," he says, "but adaptation as full Cr(VI) replacements has been limited due to many factors. These include negative cost perceptions, the availability of very good sources of chromic acid, and proven experience and ease of treating Cr(VI) waste.

"In the end, waste treatment chromium sludge cakes coming from Cr(III) or Cr(VI) don't necessarily matter. What is driving the switch to Cr(III) technology likely comes more from increased emissions standards for hazardous Cr(VI) mists and industry movement away from PFOS/PFOA mist suppressants due to regulations toward these hazardous species and higher costs for emission controls in plating applicators."

Additionally, Cr(III) application and technology improvements with these systems over the past few years have seen increased interest by the automotive industry, for both interior and exterior applications for replacing deposits from Cr(VI) systems. Also, adaptation of Cr(III) technologies as the final application to many parts allows for plating on plastics (POP) lines to be completely Cr(VI) free, with recent advances in the replacement of Cr(VI) etching technology.

There is, Durkin says, a current focus on two new technologies replacing Cr(VI) applications that offer solid chances of success. One is complete non-Chromium etching of plastics, which exists today and offers a viable alternative to use of Cr(VI). This, he notes, has been common practice for decades. And over the past five years, Functional Hard Chromium deposits originating from Cr(VI) have been challenged by breakthroughs in the development of chemistry based on trivalent chromium.

"It's still early in the development cycle," he notes, "but equivalent or improved deposit properties have been achieved from these systems."

For plating on plastics (POP), controlled etching of the constituents in the plastic is a critical factor in the ability of the plated coating systems to meet given performance standards and for providing the right appearance. The standard practice for etching has been to use high concentrations of chromic acid (CrVI), typically 400 g/L, blended with high concentrations of sulfuric acid and other additives required to control surface tension for keeping hazardous Cr(VI) mists from permeating the production area.

These chemistries are operated from 65 to 70 deg. C to etch the plastic for providing proper adhesion of the subsequent plated layers so mist formation during the etching reactions can be high.

"In POP production environments," says Durkin, "we have been able to successfully demonstrate non-chromium etching application of plastics using our Silken Bond technology. Data and production experience demonstrates deposit peel strength, and adhesion is equivalent to that achieved from conventional Cr(VI) chrome etches.

"The non-chromium process is easily adaptable to existing POP process lines and one production facility has been in operation for 24 months with the original tank make-up verifying the stability of the chemistry in a high production setting. There is no need for multiple reclaim rinses after the etching, or special scrubber systems or other environmental safeguards as is required for Cr(VI) etching systems."

This non-chrome technology, based on permanganate chemistry, calls for incorporating an oxidation cell to the etch tank solution, with some other minor modifications to the process that are easily adaptable in existing POP lines. This process, Durkin says, operates with 0.3 g/L of permanganate, which is a many times lower concentration than other chrome-free systems currently being pursued in the market.

"The resulting etched topography of the plastic surface is much smoother measured as Ra values," he explains, "than what you get with chromic acid-etched surfaces, but provides equivalent adhesion values. As a result, another advantage is less palladium consumption from the smoother Ra topography, which impacts positively overall process operating costs.

"Viable hard chromium technology based on Cr(III) formulation electrolytes has been established over the past five years, and based on validation results is ready to replace some Cr(VI) applications across many industries. The technology has a much higher operating pH of 4.5 to 5.5 electrolytes versus Cr(VI) which is typically less than 1.0 pH, and does not require special equipment for mist emission control in contrast to Cr(VI) technology."

The process, he adds, deposits up to 38µ/hour, which is slower than some higher efficiency Cr(VI) systems. However, these issues are being evaluated for improvement. The system also avoids the use of lead/lead alloy anodes by substituting the use of inert anode systems which offers environmental advantages, and elimination of hazardous sludge and stripping solutions. ■

De Nora Tech is a service-driven enterprise, specializing in market-leading manufacturing of anodes and cathodes for electrochemical processes since 1968. With a reputation of on-time delivery, product consistency, and diligent development, De Nora Tech provides unrelenting support to our clientele.

Whether your plating needs are steadfast standard structures or cutting-edge prototypes, we have the resources and understanding to promote your success. Proven science coupled with precise application protocol ensures quality surface plating cycle after cycle. From Custom MMO Auxiliary anodes, to Primary MMO anodes for Tri-chrome, MMO Balancing anodes, and Platinum plated Ti/Nb anodes.

De Nora Tech demonstrates proven experience, excellence, and reliability across our diverse electrochemical product line. Our Dimensionally Stable Anodes (DSA®) technology is widely used in chemical, metallurgy, electrolysis, water treatment, cathodic protection, and other industries.

With our state-of-the-art Technology Center located in Concord (Ohio -US), and electrode manufacturing / coating facility, located in nearby Chardon (Ohio - US) De Nora Tech remains well positioned to service our North American clients. Currently De Nora Tech's has established coating capacity to 1.6 million ft2 (150,000 m2) annually. Building on the legacy of ELTECH Systems (acquired in 2005) De Nora Tech continues to progress with future construction to an industry-designed, 130,000 ft2 (12,077 m2) facility on 18.6 acres. The $31 million investment will be operational by spring of 2019.

De Nora Tech is part of the worldwide De Nora Group operating 12 manufacturing facilities across the globe and headquartered by Industrie De Nora in Milan, Italy. With over 90 years in business, De Nora aims to strengthen its position as the world's leading provider of electrochemical products and services by uniting a unique value proposition of economic success, respect for the environment, and social responsibility.

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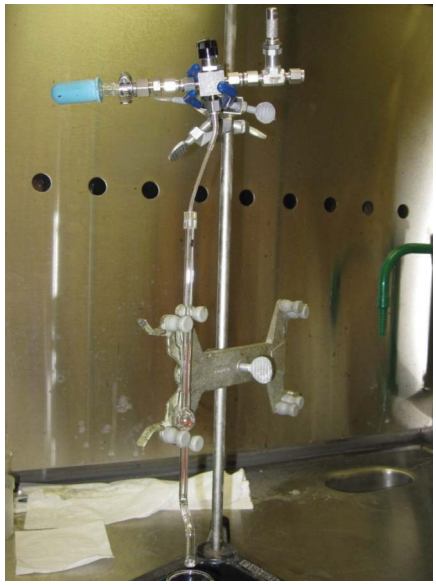
Surface Tension

BY PETER PAINE

This paper on Surface Tension provides information on what is surface tension, the use and role of fume suppressants, the measurement of surface tension by different instrumentation (stalagmometer and tensiometer) and to provide some general information on this subject.

The importance of surface tension as a control parameter or regulated parameter is also presented from the context of chromium plating processes (which use chromic acid as an electrolyte (i.e. the plating solution) to electrodeposit metallic chromium on substrate metal parts (i.e. plating)), especially for those companies who perform chromium plating and chromic acid anodizing and who are now required to comply with various federal and provincial environmental legislation.



Stalagmometer and a Du Nuoy tensiometer

The significance of chromic acid (H_2CrO_4) is that it is a hexavalent chromium compound (i.e., chromium is in the Cr (VI) valence state) which is considered to be a respiratory carcinogen and which has been declared toxic by several regulatory agencies (e.g., US EPA, Environment Canada).

Regulatory agencies now use surface tension reduction as a control parameter to prevent the release of chromic acid fumes or mists to the workplace and to the environment.

What is Surface Tension?

In any liquid, surface tension (ST) is the attractive force exerted by the molecules below the surface of the solution upon those molecules at the immediate surface/air interface. These stronger attractive forces result from the higher concentration of molecules in a liquid when compared to the lower concentration of molecules in the gas phase (i.e., the air above and in contact with the solution).

In the case of a solution which is primarily composed of water (as in a typical electroplating solution), surface tension is also aided by hydrogen bonding between the water molecules within the body of the solution. Hydrogen bonding is caused by the highly polar nature of the water molecule.

Surface tension is measured in dynes/cm or mN/m, these units being equivalent.

Polar liquids such as water at room temperature have comparatively high surface tension values (ST water = 73 dynes/cm); nonpolar liquids (i.e., organic liquids such as benzene, ethyl alcohol) have much lower surface tension values.

Mercury, the only metallic element which is a liquid at room temperature, has the highest surface tension of any liquid (480 dynes/cm). The high surface tension of liquid mercury accounts for its beading characteristics.

What is a Fume Suppressant?

A Fume Suppressant (which is also called a mist suppressant) is a hydrocarbon based chemical which contains one or more types of organic compounds which will reduce the surface tension of a plating solution (e.g., a chromium plating solution) when it is dissolved in or added to the plating solution.

They function to suppress the formation of fumes or mists created during electroplating processes due to the evolution of hydrogen and oxygen at the electrodes. Hydrogen is released at the cathode and oxygen is released at the anode. If the plating solution is chromic acid (as used for chromium plating) then these gases break the surface of the solution and in doing so create mists of chromic acid which are released into the air above

Palm Commodities International, LLC

Palm Commodities International, LLC is a wholly owned subsidiary of Umicore North America. Umicore is a global materials technology and recycling group, with about 10,000 employees and a turnover of $10 billion in 2016. Umicore generates the majority of its revenues and dedicates most of its R&D efforts to clean technologies, such as emission control catalysts, materials for rechargeable batteries and recycling. Umicore's overriding goal of sustainable value creation is based on an ambition to develop, produce and recycle materials in a way that fulfils its mission: materials for a better life.

Palm is chemical manufacturing and distribution business based outside of Nashville, in LaVergne, TN. Palm produces high purity liquid nickel concentrates such as nickel bromide, nickel chloride, nickel sulfamate and nickel sulfate solutions. Palm also offers toll blending, contract manufacturing and private labeling services for liquid chemical products. In addition, Palm distributes over 150 chemical and metal products to industries as diverse as the electroplating, surface finishing, glass, ceramic, catalyst and water treatment markets.

Since 1978 Palm has developed a reputation of producing and selling high quality products and delivering outstanding customer service. Palm solves problems for our customers while looking for innovative ways to add value. To learn more please visit us at www.palminc.com

the tank and potentially into the workplace.

Due to historical workplace inhalation of acidic mists from plating (and severe respiratory health consequences to employees who were not properly protected), there are now strict OSH requirements for hexavalent chromium in the workplace.

Historically, the early fume suppressants were hydrocarbon based chemicals (e.g. kerosene and mineral oil) which, because of their lower specific gravity, would tend to accumulate at the surface of the plating solution and lower the surface tension.

These early fume suppressants caused contamination of the plating solutions which resulted in frequent dumping of the plating solution as contamination increased.

Presently, there are two types of fume suppressants in commerce: those which contain perfluorooctane sulphonate (PFOS) and those which do not contain PFOS. The use of PFOS in commercial fume suppressant formulations dates from about the mid 1980s to the early 1990s.

(In 2008, Environment Canada brought out regulations which would ban the use of PFOS based fume suppressants by 2013).

Fume suppressants are typically liquids with a specific gravity (SG) in the range 0.9 to 1.1 which is close to the specific gravity of the chromic acid plating solution and which allows it to easily mix into the plating solution.

How does a Fume Suppressant work?

When added to a plating solution fume suppressants are mixed throughout the volume of the solution by agitation of the solution. Agitation of a plating solution is done either mechanically, by air lance or from the electrolytic process itself (i.e. gas evolution) and the movement of parts into and out of the plating tank.

With respect to chromium plating, fume suppressants work by reducing the energy with which the gases of electrolysis (i.e., hydrogen and oxygen which are released in the form of bubbles) break the surface of the solution. Fume suppressants also reduce the size of the gas bubbles at the surface.

A lower surface tension reduces the misting above the plating solution and therefore also reduces the release of hexavalent chromium into the workplace (OSH requirements) and the environment (federal and provincial requirements).

What is PFOS?

PFOS (perfluorooctane sulphonate: $C8F17SO3$) is a fluorinated organic compound which belongs to the perfluoroalkoxy (PFA) family. It is chemically related to Teflon.

PFOS is a chemically stable organic compound with very strong carbon-fluorine bonds and which is not degraded by the highly acidic and strongly oxidizing chromic acid solution.

Before the use of PFOS in fume suppressants, fume suppressant formulations were composed of other organic compounds (as mentioned earlier) which were not as stable as PFOS. When attacked or oxidized by chromic acid, these organic compounds would decompose into lower molecular weight organic fractions.

This decomposition resulted in the reduction of hexavalent chromium and the formation of trivalent chromium. Trivalent chromium is a contaminant in a hexavalent chromium plating solution and trivalent chromium build-up may eventually require disposal of the solution.

In the evolution of fume suppressant chemistry from the 1940s to the 1990s, the highly stable PFOS molecule is one of the reasons why fume suppressants which contained PFOS were extremely good in reducing and controlling surface tension. Their use accounted for the long operating life and stability of the fume suppressant in the plating solution.

In a fume suppressant formulation, PFOS is present from 3 percent to 7 percent (weight percentage) of the overall formulation. The exact weight percent depends on the manufacturer of the fume suppressant. Information on PFOS content of fume suppressants is available from the suppliers' MSDS sheets.

Environment Canada's Perfluorooctane Sulfonate and its Salts and Certain Other Compounds Regulations which came into force in 2008, allow the use of PFOS in fume suppressants for chromium electroplating, chromium anodizing and reverse etching processes until May 2013.

All Canadian suppliers to the metal finishing industry now provide PFOS free chemistry for fume suppressants.

Do Fume Suppressants Disperse Throughout the Solution?

When added to a plating solution that is well mixed or agitated, fume suppressants disperse throughout the solution. This is because the specific gravity (SG) of the fume suppressant is very close to the SG of the plating solution. Fume suppressants do not stratify during plating because the solution is well agitated during plating.

There may be some stratification when the tank is not used for long periods and is allowed to cool. However, due to the similar SG values, agitation and heating, stratification of fume suppressant in a chromic acid plating solution will be minimal once the plating tank is at operating conditions.

What is the Dosage of Fume Suppressant?

The amount of fume suppressant that is required to be added depends on throughput i.e. how many parts are plated (which for decorative chromium plating will affect the loss of PFOS from drag-out and rinsing), operating amperage (i.e., amps/hour) and the desired value of surface tension that the facility has to comply with (for regu-

Filter Pump Industries

Capability: Custom Pumps, Vessels, and Systems

Filter Pump Industries is a globally known manufacturer of corrosion resistant pumps, vessels, filtration systems and filters with two plants in Southern California. It has supplied a vast spectrum of fluid management systems to the chemical processing and metal finishing industries for over 45 years.

Superior quality and craftsmanship separate FPI from all others. Custom designs and engineering service, along with complete in-house manufacturing capabilities and attention to detail, ensure customers receive the highest quality work, all performed under the same roof. Whether on a contract as needed or on a just-in-time (JIT) basis, FPI is the right choice.

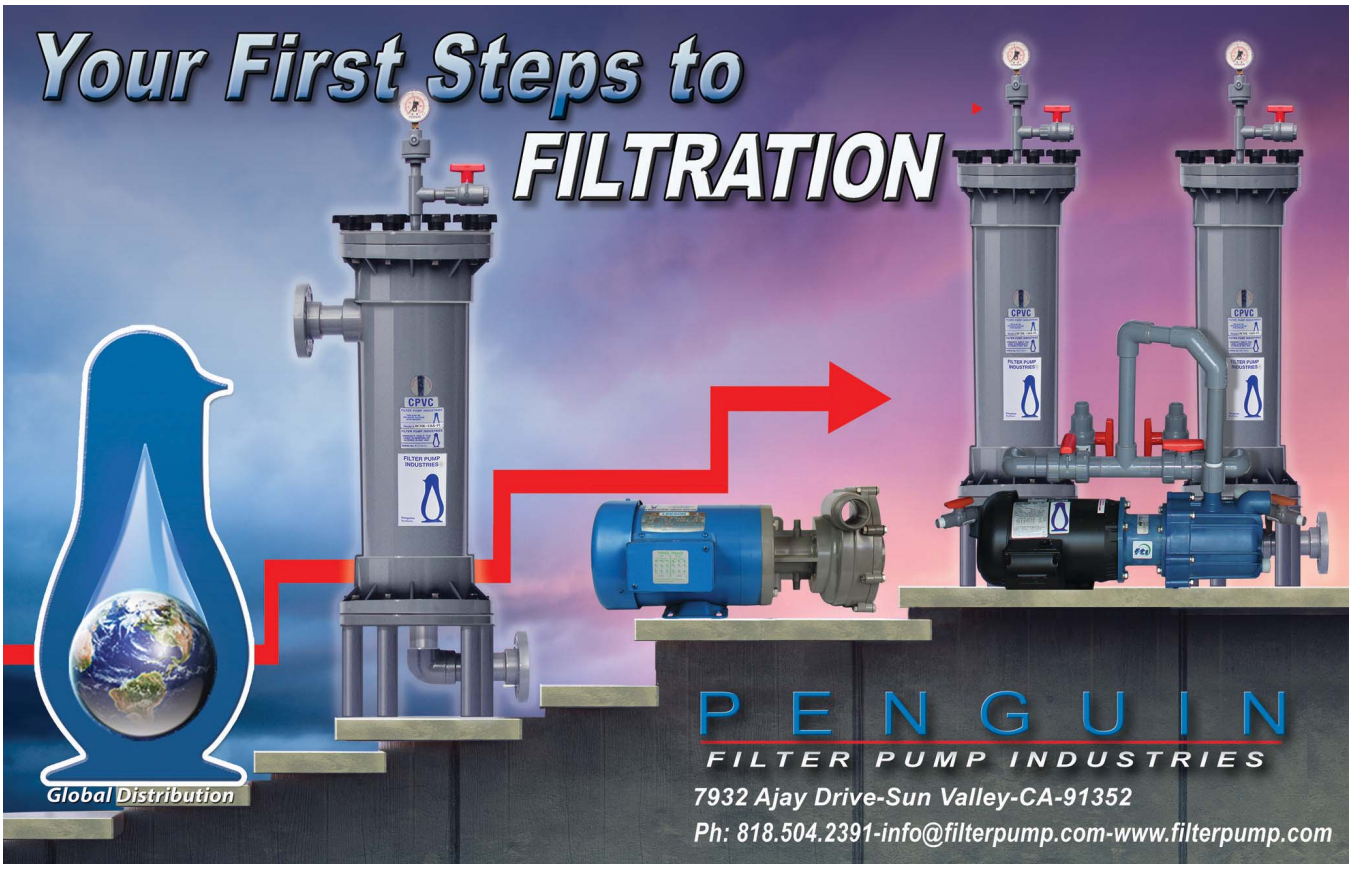
There is a broad array of custom pumps offered, including vertical seal-less immersible, horizontal centrifugal direct drive or magnetic driven centrifugal, and self-priming. Experienced application engineers are available to assist in design and implementation of all products. All pumps are of exceedingly high quality and are used in a wide scope of industries and applications, with special emphasis on vertical seal-less pumps. A diverse variety of pump features are available to fulfill any customer design requirements.

Filter vessels are manufactured in many sizes with a wide variety of filter media and types available, including string wound, melt blown, pleated, bag, and carbon. The company facility accommodates a wide variety of materials for the construction of custom-built filtration systems. It regularly manufactures using CPVC, PVDF, polypropylene, stainless steel, titanium, Viton, Kynar, EPDM, PTFE, PVC, and many other materials. These filtration systems are resistant to a broad range of chemicals, including bases, acids, salt water, sulfuric acid, plating baths, and numerous others.

There is also a wide variety of standard and custom filters, including bag and carbon treatment, as well as string wound, melt blown, and pleated cartridge filters.

The company takes great pride in the quality of its work. A team of experts continually researches the latest technologies to create the most advanced systems available. Pumps and filtration systems feature the highest levels of durability and performance. Special attention is paid to detail, and with the complete in-house capabilities, the highest levels of quality control are fulfilled from beginning to end.

The company can be reached at 818-504-2391, at the website or email address, or through area distributors.
Filter Pump Industries division Penguin Pumps Corp
7932 Ajay Drive
Sun Valley, Ca. 91352
Email: info@filterpump.com
www.filterpump.com



latory purposes) or would like to maintain during plating.

In most cases, the addition of fume suppressant is from 0.1 to 0.2 percent by volume (bv).

For example an addition rate of 0.15 percent (bv) will be 1.5 Litres of fume suppressant per 1000 Litres of plating solution (or 1.5 gallons per 1000 gallons). However, as stated earlier, the exact dosage of fume suppressant will depend on operating parameters during plating and the requirements of the company.

Measuring Surface Tension

For the purposes of Environment Canada's Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulations, which came into force in 2009, surface tension can be measured with a stalagmometer or a Du Nuoy tensiometer.

In order to comply with the existing regulations, the surface tension in each tank during plating must be maintained at less than 45 dynes/cm (if measured with a stalagmometer) or less than 35 dynes/cm (if measured with a Du Nuoy tensiometer). The surface tension of the plating solution also has to be measured once a day and the values recorded.

If using a stalagmometer, manufacturers' instructions are to be followed.

If using a Du Nuoy tensiometer, ASTM Method D 1331 – 89 is to be followed.

Good Practices for Measuring Surface Tension

When measuring surface tension with either a stalagmometer or tensiometer ensure that the plating solution in the tank is well mixed (or agitated) before the sample is taken from the tank.

Agitation is an ongoing process during plating due to the evolution of hydrogen and oxygen gases (which cause turbulence and mixes the solution as these gases rise through the solution to the surface). Agitation can be also done by manually mixing the tank or with an air lance which sparges compressed air (oil free air only) through the tank.

A sample collected from a well mixed tank will ensure that the fume suppressant is dispersed throughout the solution and in this way will be a representative sample for surface tension analysis.

With PFOS free fume suppressant now available and used for surface tension control, proper agitation of the solution is very important to ensure that a representative sample is collected for surface tension measurement.

Allow the sample collected from the plating tank to cool to room temperature before measuring surface tension.

The Du Nuoy Tensiometer

A tensiometer (Du Nuoy precision ring tensiometer) measures surface tension by use of a torsion arm and a platinum-iridium ring which is placed in a sample of the solution to be measured for surface tension.

The ring is then removed (i.e., raised up) from the solution as the platform supporting the sample is lowered. At the point at which the ring breaks free from the surface, the surface tension is read directly from the dial. This tensiometer is a very accurate device with surface tension values reproducible to +/- 0.05 dynes/cm.

However, the important drawbacks are the initial cost of the Du Nuoy tensiometer and the fragility of the platinum-iridium ring (if dropped) and its availability and replacement cost in the event that it becomes out of true.

The Kibron Easy Pi (trademark) and Aqua Pi (trademark) Tensiometers

A fairly recent development to measuring surface tension is from Kibron Inc. Oy (www.kibroncom), a company from Helsinki, Finland which produces surface phenomenon equipment.

The Kibron EZ Pi and Aqua Pi tensiometers measure surface tension of solutions with a probe which is removed from a small volume (3 mL) of the plating solution.

There are many advantages of the Kibron tensiometers over the DuNuoy tensiometer the primary ones being the robustness of the units, their transportability, the small volume of solution needed and the reliability of the probe itself.

It is this writer's opinion (in a paper presented at NASF-SURFIN 2012, Las Vegas) that the Kibron tensiometer is the preferred approach to the reliable, consistent, frequent and accurate measurement of surface tension.

With fume suppressants formulations now using PFOS free chemistries, there may be a need for more frequent measurement of surface tension to ensure continued compliance with the 35 dynes/cm limit. The Kibron fills a need if frequent measurements are needed.

For more information on Kibron Tensiometers or to see a demonstration of the Kibron Aqua Pi at your company please contact the writer at pjpinc@rogers.com or the contact information provided at the end of this paper.

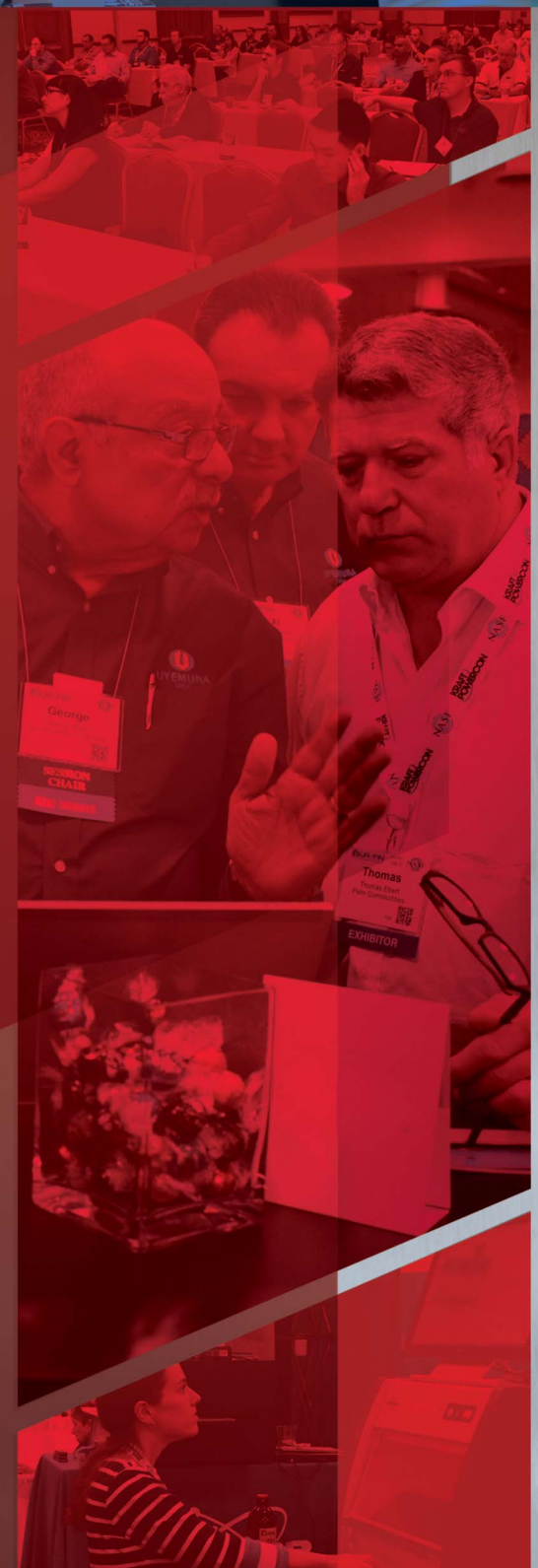
The Stalagmometer

A stalagmometer is a calibrated glass tube which uses a drop count method to determine surface tension. The stalagmometer works on the principle that solutions with low surface tension will produce more drops for a given measured volume.

Drops are counted as the solution level in the stalagmometer falls from the top etched line to the bottom etched line, which represents an exact volume (either 2.5 or 5.0 mL).

Stalagmometers come in three sizes: 2.5 mL, 3.5 mL and 5.0 mL.

The 2.5 mL and 5.0 mL sizes allow flexibility in sample



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	Stalagmometer	Du Nuoy Tensiometer	Kibron TensiometerEZ Pi, Aqua Pi
Pros	Economical	Expensive	Ease of use • Consumable vials-Easy to clean and handle probe • Quick measurements
	Small size	Accuracy (+/- 0.05 dynes/cm)	Accurate, robust, Reliable, accuracy +/- 0.05 dynes/cm
	Portable (up to a point)	Speed (15 – 20 sec) May be recalibrated	Portable Self-calibration
Cons	Lengthy prep time and requirement to maintain cleanliness of the unit	Sample cooling slow due to large volume	N/A
	Requires fume hood (optional)	N/A	N/A
	Requires chemicals for cleaning	N/A	N/A
	Must calculate results	N/A	N/A
	Fragile glass	Ring is fragile and expensive	N/A

size for most liquid baths, while the 3.5 mL is used for more viscous applications.

The majority of chromium platers in Canada opting for surface tension control to comply with the regulations will use the 2.5 mL or 5.0 mL stalagmometer for non-viscous solutions.

A summary of the pros and cons of the stalagmometer, Du Nuoy and Kibron tensiometers is given see chart above.

Calculation of Surface Tension with a Stalagmometer

The equation for calculating surface tension with a stalagmometer is derived from Tate's Law. Solving for Tate's Law gives the formula for calculating surface tension for the 2.5 ml and 5.0 ml stalagmometer.

2.5 mL Stalagmometer:

Surface Tension = (1440 x Specific Gravity) / number of drops counted (Specific Gravity (SG) refers to the SG of the chromic acid plating solution)

5.0 mL Stalagmometer:

Surface Tension = (2880 x Specific Gravity) / number of drops counted

Composition of a Chromium Electroplating Solution

A chromium electroplating solution is made by dissolving solid chromium trioxide in water.

Chromium trioxide has a density of 2.7 grams/cubic centimetre (2.7 g/cc) and since water has a density of 1.0 g/cc, chromium trioxide has a specific gravity of 2.7.

The chromium electroplating solution will also include sulphuric acid (which is present in a 100 to 1 ratio with chromic acid to provide the required and necessary sulphate catalyst). The specific gravity of a chromic acid solution depends on the concentration of the chromic acid solution itself. For a typical chromic acid electroplating solution with a chromic acid concentration of 250 g/L and sulphate concentration of 2.5 g/L, the SG will be in the range of 1.11 to 1.16.

For optimal plating quality and performance, the concentration of the chromic acid solution has to remain in the region of 250 g/L and the sulphate catalyst also has to remain at a 100:1 ratio (or 2.5 g/L). In a steady state operating mode (i.e., plating and with parts entering and leaving the tank at the typical operating procedures for the company and with solution make up to compensate for plating losses), the SG of the plating solution will remain fairly constant.

How is the Specific Gravity of a Plating Solution Measured?

The determination of the specific gravity of a chromium plating solution (which is needed for the stalagmometer

calculations) is made with a hydrometer or Baume stick. A hydrometer is usually made of glass and consists of a cylindrical stem and a bulb weighted with mercury or lead shot to make it float upright. The liquid to be tested (in this case the plating solution) is poured into a tall jar (such as a 1 or 2 L graduated cylinder), and the hydrometer is gently lowered into the liquid until it floats freely. The point at which the surface of the liquid touches the stem of the hydrometer is noted. Hydrometers usually contain a scale inside the stem, so that the specific gravity can be read directly.

Note that the sample of plating solution has to cool to room temperature before the SG determination is made.

Using Fume Suppressants for Chromium Anodizing (Chromic Acid Anodizing)

Chromium anodizing is the anodizing of a metal in chromic acid which is also referred to as chromic acid anodizing. The substrate (metal) is almost always aluminum and the principal industrial sector served by chromium anodizing is the aerospace industry.

Chromium anodizing for the aerospace industry has to follow strict specifications as to what chemistry is allowed due to the critical application of aerospace parts.

Use of fume suppressants for chromium anodizing, while rare (most aerospace anodizers will use a control device), is found in the industry. However, it is up to the client organization to specify if fume suppressants can be used for chromic acid anodizing.

Suppliers of Surface Tension Measuring Equipment:

Stalagmometers and Tensiometers are available from companies that supply to the metal finishing industry.

For more information please contact Dynamix-Inc at www.dynamix-inc.com.

References:
EC Chromium Regs
EC PFOS Regs
Peters CFCM paper from June 2011

Peter Paine is the owner and CEO of P.J. Paine & Associates, Ottawa, ON. He can be reached:
Tel: (613) 722-9029;
Cell: (613) 884-9029;
or by email at pjpinc@rogers.com.

Marine Corrosion Protection


BullFrog marine coating.

BullFrog products can replace conventional and hazardous petroleum-based rust preventatives. Their particular application is for ships, structures and equipment used in sea water service. They also protect against atmospheric corrosion of metals exposed on or near coastlines and hot salt corrosion in engines.

They offer fast, one-step corrosion protection, multi-metal protection and easy and quick application. BullFrog VpCI's bond with metal surfaces to form a protective 'molecular umbrella,' sealing out air and moisture that cause rust and corrosion. They continue to work for up to two years.

www.cortecvci.com

Monocoat Anti-Corrosion Coating

PPG has introduced Spectracron SPM Series DTM (direct-to-metal) monocoat, a one-component coating that helps prevent corrosion on heavy-duty, transportation, agricultural and construction equipment. It is engineered for direct application to pretreated metal substrates while providing corrosion resistance that PPG said is comparable to traditional two-component primer-topcoat systems.

The proprietary high-solids, high-gloss formulation also enables Spectracron SPM coating to be applied over pretreatment chemistries such as iron-phosphate, zinc-phosphate and zirconium at supplier-recommended weights.

Scott Laney, PPG product manager, liquid coatings, said the ability to protect metal with a single-component coating offers several benefits for original equipment manufacturers (OEMs). "Spectracron SPM coating," he stated, "can help OEMs cut production space requirements, inventories and labor costs while improving throughput by eliminating the need to apply primer during the coating process."

Laney added that flash times and cure temperatures for Spectracron SPM coating are similar to those commonly associated with current urethane topcoats, eliminating concerns about fast wet-on-wet application times and enabling the coating to work without constraints on existing paint lines.

www.ppgindustrialcoatings.com

Polyurethane Lining

Rhino Linings Corp., a manufacturer and distributor and distribution of sprayed on protective linings and coatings, has released an addition to its growing line of industrial grade protective linings. HiChem 11 70 is a two component, 100 percent solids, zero VOC polyurethane lining, and is the company's most chemical resistant product to date.

The protective lining provides, the company says, excellent stability for immersion applications and where high levels of chemical resistance are required to deliver superior corrosion protection. In addition to its chemical resistance, HiChem meets NSF Standard 61 requirements for use in potable water storage tanks 5 gallons and larger or pipelines with 0.75 in. or greater pipe diameter.

"Our new industrial grade chemical resistant coating is ideal for businesses looking to extend the life of company equipment and facilities while meeting stringent federal containment regulations concerning waste management and safety storage of hazardous materials," stated Pierre Gagnon, president and chief executive officer of Rhino Linings Corp. "Besides its excellent chemical and corrosion resistance, HiChem 11 70 protective lining cures quickly, ensuring businesses experience little to no downtime and, in some cases, may return to service in less than 24 hours."


Rhino Linings polyurethane.

As a 100 percent solids, zero VOC elastomeric polyurethane, HiChem 11 70 meets the growing demand for eco friendly coatings and linings. The polyurethane lining may be applied using plural component spray equipment to concrete, fiberglass, plastic, metal and wood, including steel tanks, pipelines concrete basins, reservoirs, aerators and digesters. HiChem 11 70 protective lining creates monolithic, seamless protection that conforms to any shape and size.

www.rhinolinings.com

Oligomers for Coatings

Dymax Oligomers & Coatings has released two new oligomers, BDT-1015 and BRS-14320S. These can be utilized by coating formulators to achieve high levels of chemical and abrasion resistance for their UV-curable, matte-finish, and durable top coating on plastic substrates, while overcoming common problems with viscosity and VOC content.

These high functional oligomers offer fast tack-free curing, which speeds up production and ultimately reduces operational costs. Furthermore, they are tin- and aromatic-free. A technical bulletin, which also includes an assortment of light-curing and dispensing equipment for those looking for a complete system solution, can be downloaded at

www.dymax-oc.com

Coating Thickness Gauge

The new Elcometer 500 Coating Thickness Gauge offers improved, non-destructive measurement of dry-film coatings on concrete. It features ease of use, a robust and ergonomic design, a menu-driven color display, user selectable statistics, memory, USB & Bluetooth data transfer to PC or mobile devices.

The unit measures the thickness of dry film on concrete and other cementitious substrates up to 10mm thick. The company says it is three times faster than other technologies, and offers over 60 readings per minute in standard mode, and over 140 readings per minute in scan mode.

It is designed to prevent false or incorrect readings, the gauge only displaying a reading when the signal strength indicator goes green. Its ergonomic design makes it comfortable for continuous use.

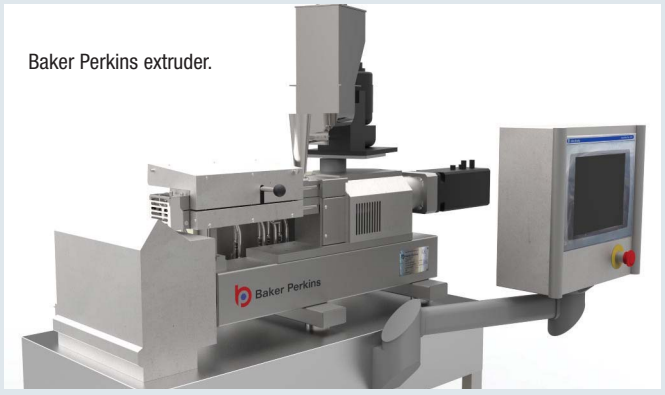
Elcometer 500.

Elcometer gauges and probes are recommended for harsh environments, and offer a dust and waterproof design equivalent to IP54, with field replaceable probe wear tips.

The user only needs to select the coating material to start measuring. There is no need to set up gates or range values, or to know the thickness of the coating.

The unit has a 100,000 reading memory with data transfer via Bluetooth or USB to ElcoMaster for PC or mobile devices for instant report generation. The gauge can be used in accordance with: ASTM 06132, SSPC PA9 & ISO 2808.

Desktop laboratory extruder



Baker Perkins extruder.

The new Baker Perkins MPX19 desktop twin-screw extruder is designed for applications such as powder coating, toner, EMC, plastics and pharmaceuticals. It incorporates features that ensure full, reliable scale-up from batch to continuous output on Baker Perkins' range of production extruders.

Calendar of Industry Events

March 20-22, 2017: CoatingsTech Conference, Westin Cleveland Downtown Hotel, Cleveland, OH. www.paint.org

March 27-31, 2017: Powder Coating 2017 Technical Conference, JW Marriott Hotel, Indianapolis, IN. www.powdercoating.org/PowderCoating2017.

April 4-6, 2017: European Coatings Show, Exhibition Centre in Nuremberg, Germany. www.nuernbergmesse-north-america.com

May 15-17, 2017: Eastern Coatings Show, Harrah's Resort, Atlantic City, NJ. www.easterncoatingsshow.com

May 24-25, 2017: Canadian Paint & Coatings Association, 104th Annual Conference and AGM, InterContinental Hotel, Saint Antoine Ouest, Montreal. www.canpaint.com

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

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

A new control system – with identical functionality to production machines – includes a full formulation management system holding up to 50 formulations; historical trending of data, and connectivity to a PC or network to capture that data. Full automatic start-up and shut down sequences mirror production extruders.

The MPX19 features the Baker Perkins clam-shell barrel so that the process can be stopped at any time with immediate access to view the state of material being processed. Adjusting the formulation, process settings and screw configurations are all straightforward. The screw configurations are identical in geometry to larger extruders, ensuring accuracy in scale up.

As well as ongoing development of existing extrusion processes, the MPX19 is recommended for companies moving from batch to continuous processing that need to establish the processing parameters necessary to match their existing product. Available as a fully integrated package with on-board HMI or a stand-alone unit with a separate panel, the extruder provides outputs in the 5 to 25 kg/hour range.

Segmented screws allow great flexibility for profile design, and splined agitator shafts maximize reliability. An electrically heated/water cooled barrel gives tight temperature control; a chill roll is included; and barrel lengths can vary from 15:1 to 40:1 L/D, with multiple process zones for a variety of applications.

www.bakerperkins.com

CLASSIFIED

AD INDEX

“au-delà de la chimie”

Plus que des mots, notre devise représente la volonté d’offrir à nos clients et fournisseurs un service unique et inégalé. Pour nous assurer de la pérennité d’Inortech, nous nous sommes joints à EMCO Canada. Les deux équipes ont le même désir de service et partagent la même philosophie. Cette nouvelle équipe continuera à se démarquer sur le marché canadien en offrant une gamme de produits de spécialités inégalée.

Notre personnel de grande expérience tant dans le service à la clientèle, la vente, la règlementation, et le service technique, saura vous appuyer dans vos projets de développement. Notre laboratoire de R&D à la fine pointe de la technologie et constamment tenu à jour par l’ajout de nouveaux équipements qui sont un appui de taille pour l’intégration de nouvelle technologie dans vos gammes de produits.

La mission d’Inortech a toujours été de repousser les limites des possibilités actuellement offertes, pour offrir à nos clients et fournisseurs les solutions les plus innovantes et avant-gardistes du moment.

L’ensemble de notre personnel assiste à de nombreuses conférences, formations et congrès, afin de se perfectionner et de confirmer leur dominance technique et leurs qualités humaines, tant reconnues par le marché.

Depuis maintenant 25 ans, Inortech n’a de cesse de donner à ses clients des occasions uniques des développements par l’appui technique incomparable qu’elle seule est capable de leur offrir. Pour nos fournisseurs, il s’agit d’une assurance de visibilité et de mise en marché hors pair de leur gamme de produits.

Proactif dans l’industrie des encres, adhésifs, plastiques, et revêtements, attentifs et attentionnés aux problématiques modernes, la sélection de nos fournisseurs représente l’élite technologique disponible, et renforce la solidité ainsi que la longévité des liens qui unit Inortech a ses partenaires.

Ce lien nous rend extrêmement fiers et nous pousse tous les jours à donner le meilleur de nous-mêmes.

Afin d’être au plus près de notre clientèle, nous avons établi un réseau de stockage par l’utilisation d’entrepôts publics à travers de Canada, là où les besoins sont établis. De ce fait, nous offrons à notre clientèle la flexibilité et la proximité nécessaires à une époque où les délais sont un facteur clé de réussite tant pour nos clients que pour nos fournisseurs.

Maillon indispensable de réussite, Inortech s’est toujours démarqué par une connaissance parfaite des besoins de ses marchés, de l’évolution technologique et commerciale actuelle, et s’adapte en permanence aux modifications incessantes de notre industrie.

Prête à relever tous les défis auxquels elle a été, est et sera confrontée, Inortech est l’atout incontournable de votre réussite, grâce à son modèle unique et avant-gardiste d’entreprise.

Ensemble, nous réussirons...

“beyond chemistry”

More than words, this motto represents Inortech’s ‘raison d’ être,’ always striving to give a unique and unparallelled service to our customers and suppliers.

We have decided to team up with EMCO Canada in order to increase our speciality offering to our customers and a much better support for our suppliers.

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

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

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

For the last 25 years, Inortech has striven to help customers successfully secure new opportunities, supported by its unparallelled technical team. Also, for our suppliers, we assure an outstanding visibility and excellent market penetration.

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

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

Inortech’s success has always been its outstanding capacity to understand new technologies and to be able to explain them to our customers. This forces Inortech’s staff to always adapt, and be on top of the ever-changing market conditions.

Because of its unique and ‘avant garde’ business model, Inortech can be part of your team, and pivotal to your success.

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