CFCM
CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

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Bright Nickel Plating

Yesterday, Today and Tomorrow

Photo credit Nickel Institute

By Stewart Tymchuk

Yesterday

Dr. Isaac Adams is credited by George Dubpernell with being the father of nickel plating in the United States. From the days of Adams, to the work of O.P. Watts, progress in the nickel plating industry has inched along. The main patent on Adams' bath and process served as the cornerstone on which subsequent researchers built. But it was not until Watts reported his work in 1915 that nickel plating really began to grow. Watts did further work that led to his famous paper of 1916, in which he suggested the formula known the world over as the "Watts bath." This laid the foundation for modern nickel plating. The bath was on its way to becoming the basic electrolyte of the nickel-plating industry.

Watts' formula was an aqueous solution of nickel sulfate, nickel chloride and boric acid. Although these continue to be the basic ingredients of the majority of

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ALSO IN THIS ISSUE

Advances in Water-Based Resins

By Sandra L Anderson

When it comes to the manufacturing of paint and coatings, the environment is a key concern, resulting in government regulations against volatile organic compounds (VOCs) and the need for manufacturers to go "green" with their products. This includes resins. Resin manufacturers have discovered waterborne technologies that still provide effective end results.

Waterborne coating is a fast-developing technology. In plastics, for example, using water as the means to transfer the coating to the plastic surface is becoming the new standard, replacing many of its solvent-based counterparts. Today's waterborne chemistries can offer equal to, or better, performance properties than solventborne for many several applications. Alternative waterborne resin applications using acrylics, epoxies and urethanes are being explored.

The Chemistry

Water-soluble paints and coatings contain water-soluble resins whose individual molecules dissolve completely in water. The resins are usually produced via polycondensation or polymerization reactions in an organic medium, hence they mostly contain organic co-solvents like alcohols, glycol ethers or other oxygen-containing solvents that are soluble or miscible with water. The resins used include polyesters, polyacrylates, alkyds, epoxies and epoxy esters. Using these resins in paints provide high gloss, a high level of corrosion protection, good pigment, wetting and stabilization.

Tapping into Waterborne Technology

Several manufacturers consider waterborne technology a chance to tap into new, natural opportunities.

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In the News

Association News

Paint and Coatings Industry Seeks Greater Focus on Producer Responsibility for Waste Diversion in Ontario

The Canadian paint and coatings industry now leads the world in post-consumer paint recycling with a waste diversion program in every Province of Canada. Under Product Care, the paint and coatings industry has been delivering waste diversion programs since 1994, when the first one was established in British Columbia. Product Care's proven model has now been adopted in the United States as it seeks to implement paint recycling programs across the country using best practices developed in Canada.

Since the Ontario Municipal Household Hazardous Waste (MHSW) program was launched in 2008 the paint and coatings industry has met or exceeded program targets for waste diversion. "The paint and coatings industry has taken the concept of Extended Producer Responsibility (EPR) seriously and despite significant challenges with administration of the program in Ontario, the industry continues to exceed government approved targets in the Province," commentsGary LeRoux, President of the Canadian Paint and Coatings Association.

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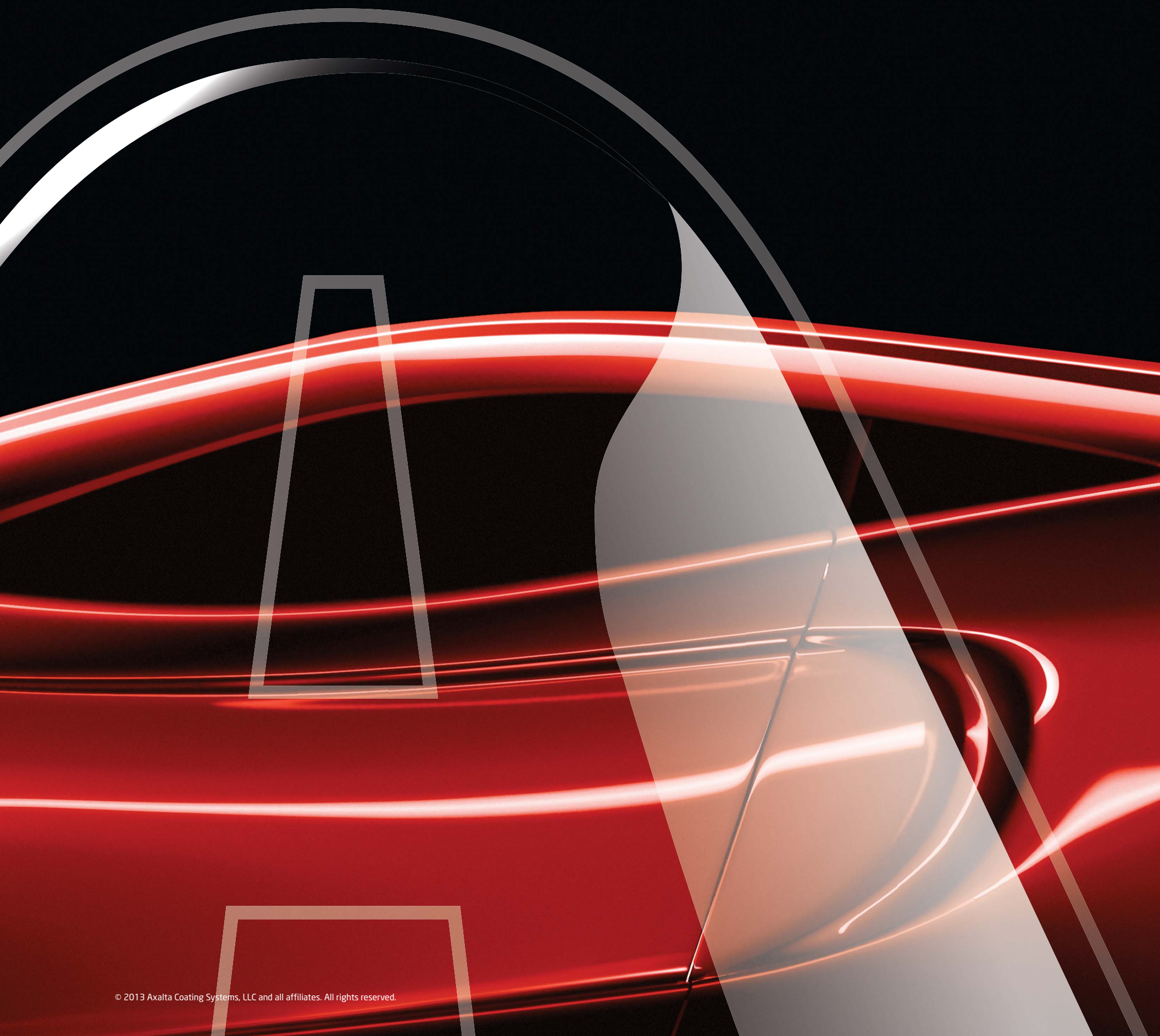

It's Time

Spring is finally here. A month and a half after it was supposed to arrive. There have been plenty of jokes about groundhog stews and "just desserts" for the lying rodent. With Spring comes the Canadian Finishing and Coatings Manufacturing magazine's July issue Buyers' Guide. The best way to include a new listing and to update your existing one is to go online. Online, you have the opportunity to fill out and submit your entire form and update it throughout the year. Do not forget to include product information as well as company information. CFCM will confirm all updates. But, you do have to update, even if there are no changes from last year. You can access the online Guide anytime; however, for your listing to appear in our printed July issue, you must have your form completed by June 25, 2013.

By clicking on the New Listing button on the web page, http://www.cfcm.mercuryemail.com, you can submit your entire form online. However, if you prefer you can download a pdf of the form. Then by reading off your completed form you can still input it online or fax the entire form to 519-442-1359. Another option is to scan your hard copy of the form and email it to: sandra.anderson@cfcm.ca. Please note that submitting and making changes to your entire form online is the best way to ensure correctness.

Categories for products and services include:

Industrial Finishes
- Industrial Finishing Equipment
- Paint & Coating Raw Materials
- Paint & Coating Manufacturing Equipment
- Custom Coaters and Job Shops
- Associations, Education, & Government

Meanwhile, have a great summer, and we will see you again in Fall with our September/October issue. If you are an industry expert and would like to share your knowledge with us by writing an article for CFCM, or if you have an idea for a Case Study, please contact and discuss it with our Editor. Upcoming topics include:

September/October 2013

Five Show Issue:

Radtech uv.eb EAST 2013
October 1-2, 2013
Sheraton Hotel & Conference Center at Syracuse University Syracuse, NY
www.radtech.org

Powder Coating 2013,
October 8-10, 2013 America's Center St. Louis, MO
www.coating-show.com

AAC 2013 Anodizing Conference and Show, Chicago IL.
www.anodizing.org

CPCA 100th Anniversary Conference
October 20-22
Chateau Laurier, Ottawa, ON
www.cdnpaint.org

WMS - Woodworking Machinery & Supply Expo, October 24-26, 2013
International Centre Toronto, HYPERLINK
www.WoodworkingExpo.ca

Paint and Coatings Manufacturing
- Fillers
- Flame Retardants
- Global Harmonization

Industrial Finishing
- Powder Coating Quick Colour Change
- Flat Line Finishing Systems
- Waterbourne Wood Finishes and Stains
- Pretreatment and Washing

Plating and Anodizing
- Anodizing Trends
- Power Supplies and Rectifiers

November/December 2013

SHOW ISSUE: Bonus Circulation from our Booth at: FINISHING TECHNOLOGIES Pavilion and Conference at FABTECH, November 18-21, 2013 McCormick Place, Chicago, IL, www.fabtechexpo.com

Plating and Anodizing
- Precious Metal Plating
- Air Pollution Control

Paint and Coatings Manufacturing
- Anti Corrosion Additives
- Biocides, Algaecides, and Preservatives
- WHMIS reporting

Industrial Finishing
- Aerospace Coatings
- Masking
- Testing Equipment

Feel free to contact the editor if you have any questions: sandra.anderson@cfcm.ca

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In the News

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The Waste Diversion Act (WDA) encourages producers to take increased responsibility for its waste under a provision of the Act called Industry Stewardship Plans (ISP). The industry has once again stepped up to the challenge for assuming greater responsibility and is now working with Waste Diversion Ontario on an ISP for responsible post-consumer paint recycling in Ontario. All paint and coatings members of CPCA have signed a letter of intent to move forward with a new program operator in Ontario. Once approved the program will lead to better governance, improved transparency and it will ensure best practices are followed in post-consumer waste diversion.

"We are encouraged to learn that the Minister intends to move forward with proposed changes to the Waste Diversion Act that focuses on outcomes over process with respect to waste diversion," says Gary LeRoux. The paint and coatings industry remains optimistic that it will achieve approved program targets, ensuring the sector is responsible and sustainable over the long term.

Paint and Coatings Industry Offers Online Diploma in Coatings Technology

The Canadian Paint and Coatings Association (CPCA) is pleased to offer a Diploma in Coatings Technology to members and non-members in the coatings industry in Canada and around the world. The course material and examinations, including the final exam, are now delivered exclusively online for maximum convenience and efficiency.

CPCA recently took over the administration of the course from the Toronto Society for Coatings Technology (TOSCOT), which developed the course in the early 1990s to accelerate on-the-job training for new chemists joining the industry. Over the years, the course has provided a solid foundation in coatings technology for 800+ graduates in Canada.

"The Diploma in Coatings Technology fills the gap between postsecondary education and the specialized knowledge that is required for success in the coatings industry," said Gary LeRoux, President of the Canadian Paint and Coatings Association. "The skills shortage has reached a crisis point in Canada and this course helps address the issue for our industry."

The course material and examinations, including the final exam, are now delivered exclusively online for maximum convenience and efficiency. The final exam will be based on case studies to test the knowledge gleaned from the course work in each semester. Work at your own pace to gain the knowledge you need to advance your career in the paint and coatings industry.

If you are an employer and would like to have your staff receive further training in the coatings sector to better serve your industrial or retail customers, this course will help you do your part for important lifelong learning.

If you are on staff in some aspect of the coatings industry and want to do your job better, serve your customer well and advance in the industry, this course is for you.

If you are a person who wants to seek opportunities in the paint and coatings industry but don't have specific industry knowledge, this course will give you the basic training you need.

The course is divided into three semesters, with all material and examinations delivered online. The content provides an overview of paint and coatings technology that will be of interest to all those who wish to advance their career in the industry.

"Despite my knowledge of coatings and coatings principles, this course provided a broad and accurate perspective of the coatings industry. The wide range of systems and processes offered by the program – in a very short timeframe – makes this an invaluable and superb educational experience for anyone in the coatings industry. Whether you are in sales, R&D or administration, I highly recommend the program," said Jake Jevric, Sales Manager, Coatings and Inks at L.V. Lomas Limited.

CPCA has created an Education and Training Technical Committee that will also include members who were previously board members of TOSCOT. This Committee will also include representation from other members of CPCA who will assist in providing the training support, advice and development needed to help sustain the paint and coatings industry in the coming years.

For more information or to register for the Diploma in Coatings Technology, visit the CPCA website.

Manufacturing Panel at SurFin 2013

The National Association for Surface Finishing (NASF) will present an International Manufacturing Panel Discussion at the 95th Annual SUR/FIN Manufacturing & Technology Tradeshow & Conference, on Monday, June 10-12, 2013. The panel will include an esteemed list of international manufacturing experts from the United Kingdom, Singapore, Japan, Mexico, Brazil, China and Canada who will discuss the future of manufacturing.

As reported by the Manufacturing Institute, industrial output continues to grow, manufactured products are globally competitive, and the rebound from the recession surprised on the upside. While U.S. manufacturing itself is the ninth largest economy in the world, its impact on the overall U.S. economy is much larger when the "multiplier effect" is taken into account. In fact, millions of additional American jobs are a direct result of U.S. manufacturing.

The panel event will run from 3:45 to 5:00pm Monday, June 10, 2013 at the Donald E. Stephens Convention Center in Rosemont, IL as part of an extensive schedule of sessions planned during SUR/FIN.

In conjunction with the conference, over 150 companies from around the country will exhibit the latest in products and technologies, offering in-depth presentations, special product features and live demonstrations.

More information and registration options for the conference and tradeshow can be found at www.nasfsurfin.com

RadTech 2014 Call for Papers

RadTech is excited to announce the Call for Papers for RadTech UV & EB Technology Expo & Conference 2014 taking place May 12-14, 2014 at the Hyatt Regency O'Hare in Rosemont, IL.

RadTech welcome all abstracts related to UV and EB curing technology, but are especially excited to see abstracts from the following "Hot" areas:

- LED Formulation & Equipment Advances
- Additive Manufacturing
- Advanced Materials
- Advanced Applications

For a complete list of topics, visit:
http://www.radtech2014.com/callforpapers.html
Abstracts can be submitted online between now and AUGUST 12, 2013.

RadTech UV & EB Technology Expo
& Conference 2014
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Hyatt Regency O'Hare - Rosemont, IL
http://www.radtech2014.com

Electrocoating Seminar Coming to Nashville

The Electrocoat Association and the Chemical Coaters Association International are pleased to bring the finishing industry the 2013 Electrocoating Seminar, to be held at the Sheraton Music City Hotel in Nashville, Tennessee on September 17-18, 2013.

An Introduction to Electrocoating will kick off Day1 of the educational event, providing some basic electrocoating knowledge to bring attendees up-to-speed with the technology before tackling more advanced topics in the remainder of the seminar. The discussion will center on efficiency, reducing production and non-production costs and overall system effectiveness in the different areas of an electrocoating process. Presenters will move through an e-coat system to expose typical areas of energy, waste and cost savings per component, while also discussing ways to maximize efficiency through racking, enhancements, etc. Troubleshooting for defects that could possibly plague a system will be explained and illustrated with actual examples available for handling.

Organizers are working to include a tour to give attendees a "real-world" experience to complement the classroom-style learning.

With an evening networking event, attendees will be able to meet industry experts and ask questions specific to their company's needs while enjoying snacks and beverages.

www.electrocoat.org

Company News

Former Cytec Industries Coating Resins Business Becomes Independent as sale to Funds Affiliated with Advent International is Completed

The coating resins business that was formerly part of Cytec Industries Inc. has become an independent company with the completion of the previously announced sale from Cytec to funds affiliated with Advent International, one of the leading global private equity firms. The coating resins business, which will adopt a new brand name in the coming months, is one of the leading global producers of coating resins with a broad product portfolio and leading market and technology positions.

The new company is performing well. It is one of the largest producers in a $30 billion global market that is growing strongly, as end users seek cost-efficient and environmentally friendly technologies for their coating processes and individual applications. Advent and the new company see many opportunities for further development.

The coating resins business is headquartered in Brussels, Belgium and has operations throughout Europe, US and Asia. It develops, produces and sells synthetic resins used for the production of paints and coatings as well as printing inks. The portfolio also includes crosslinkers and additives.

Advent has been active in the chemicals industry for more than 25 years and has invested

in over 30 companies in the sector globally. The firm has developed a strong track record in acquiring these businesses from multinational corporations and enabling them to become successful independent companies. Advent's recent investments in the chemicals and materials sector include H.C. Starck, Maxam, Mondo Minerals, Oxea and Vinnolit.

Dempsey 2013 Seminar Series, Coating - Plastic

Dempsey Corporation, in association with their major partners, is holding its 10th edition of technical seminars across Canada.

Learn about the newest technology for the coatings, graphic arts and plastics markets directly from industry leaders.

In Vancouver and Winnipeg, they will focus primarily on advanced trends and technology on coatings.

This year, for the first time, the company will have two concurrent rooms in one venue in Montreal and Toronto, showcasing coatings, plus graphic arts and plastics.

Winnipeg: Monday June 17, 2013
Vancouver: Tuesday June 18, 2013
Montreal: Thursday June 20, 2013
Toronto: Friday June 21, 2013

The company's partners that will be represented in the seminars are: BASF, BYK, Halox, Laviosa Nabaltec and Trinity Resources.

Argex Selects Valleyfield as the Site for its First TiO_2 Production Plant

Argex Titanium Inc. has signed a binding memorandum of understanding (MOU) with Valleyfield Enterprises for a long-term lease of at least 235,000 square feet of existing building space located at 1300 Gérard-Cadieux Blvd in Salaberry-de-Valleyfield ("Valleyfield") in Quebec, Canada. This location will house the company's first industrial scale titanium dioxide (TiO_2) production facility. The MOU and long- term lease are conditional upon certain conditions being met or waived by Argex.

Located in the Perron Industrial and Harbour Front Park, the site can accommodate additional TiO_2 production modules and offers significant expansion potential. This location will enable Argex to save time, and avoid the large capital expenditures associated with greenfield plant construction and benefit from the existing industrial infrastructure already in place at the site.

Situated adjacent to Montreal (about 40 km southwest of the city) and close to major port and river infrastructures, the Valleyfield region is already favoured by the hydrometallurgical and chemical processing industry, as its location facilitates the shipping of merchandise via ground and maritime routes. Argex will, therefore, benefit from a qualified and experienced workforce and access to the natural gas supplies it needs for its initial module and potential expansion. Additionally, the plant will benefit from its close proximity to Hydro Quebec's Beauharnois generating station, one of the largest hydroelectric power plants in the world. The plant's close proximity to Montreal's Trudeau International Airport will also make it easy for customers and potential partners to visit the Argex facilities.

"This represents an important milestone for Argex at a time when the Company is accelerating its progress towards production, and it removes many of the risks associated with a lengthy construction project," says Roy Bonnell, President and CEO of Argex. "The location of our plant in Valleyfield will easily facilitate delivery of the raw materials and by-products from our supply partners and provide us with the option to expand the infrastructure already available."

"We are pleased to be working in partnership with Argex on such an exciting project" comments Carmine Como, representative of Valleyfield Enterprises. "We see Argex's decision to select this site for the long- term as significant contribution to the revitalization of the Perron Industrial Park"

"Argex Titanium is the first TiO_2 production company to come to Salaberry-de-Valleyfield. The future of our great community involves innovative projects that combine sustainable development with economic development. It is clear that our city is becoming more and more an industrial hub for mineral processing plants thanks to our road, rail and port infrastructures," says Denis Lapointe, mayor. "The Port of Valleyfield is an important asset for the region, and I am delighted that it played a role in attracting a new business to Salaberry-de-Valleyfield," states Michel Gadoua, President and CEO of the Société du Port de Valleyfield. "Right from the start, we offered Argex our full collaboration, and we can assure it that this partnership will endure for as long as Argex conducts operations in Valleyfield."

The Argex feasibility study, announced on October 11, 2012, in collaboration with Genivar, one of Canada's largest engineering firms, will provide a cost estimate for the first Argex production module and will recommend a development plan. Once the study has been submitted, Argex will continue to pursue additional partnership opportunities, and it will launch the detailed engineering work and the hiring of suppliers necessary, many of which are expected to be situated locally in the Valleyfield area.

Argex Titanium Inc. is also pleased to announce the establishment of a fully comprehensive Research and Development Centre (R&D Centre) at its recently announced facility in Salaberry-de-Valleyfield (Valleyfield), the planned site of its first industrial-sized titanium dioxide (TiO_2) plant.

"The Argex R&D Centre will drive ongoing innovation as we continue on the pathway to production," says Enrico Di Cesare, Argex's Vice-President of Technology and Chief Operating Officer, "The close integration of our R&D activities with the development of our industrial scale plant has many operational advantages, which we expect will ensure optimal performance at the plant."

With all of its production and R&D operations merged at a single site, Argex expects to achieve significant cost savings and, additionally, benefit from the Quebec government's tax credit regime for its research and development initiatives. Furthermore, the centralization of these activities is expected to enhance the protection of the Argex intellectual property as well as that of CTL.

As part of the establishment of the R&D centre, Argex will relocate the operation of its current test facility in Mississauga, ON to the Valleyfield location where it will serve as a highly effective training tool for the future operators of the industrial-sized plant. As part of the relocation process, Argex intends to increase significantly the stated TiO_2 production capacity of the pilot plant, which should translate into both significant cost savings for sample production and expedited production times to better serve Argex's potential customers and collaboration partners.

ARGEX Titanium Inc. is a near-term producer of Titanium Dioxide (TiO_2). With a primary goal of advancing rapidly towards production, Argex has adopted a simple and low-risk strategy for the scale-up of its proprietary process that allows it to produce high-purity pigment-grade TiO_2 directly from run-of- mine material. The closed-loop process is environmentally friendly and produces minimal inert tailings.

Argex is pleased to have selected Valleyfield, Quebec as the location for its first industrial-sized production facility. The location of the site can be viewed at Argex Valleyfield.

Queen's University Researchers Develop Coating that Repels Water and Oil-Based Deposits

A new coating technology developed at Queen's University, Kingston, ON, discovered by researchers Guojun Liu and Dean Xiong, has shown promise in repelling undesired water and oil-based deposits on multiple surfaces including glass, metal, wood, ceramics, plastics and fibers.

Lorama Inc., a manufacturer and supplier of novel additives to the paint and coatings industry, is working with the researchers and PARTEQ Innovations, the university's technology transfer office, to commercialize the technology for a broad suite of uses, including anti-graffiti, anti-icing, anti-fingerprint or smudge, and anti-fouling.

The industry-academic collaboration is supported by Ontario Centres of Excellence (OCE), which is following up an initial investment of $25,000 with an additional $200,000 in development funding.

PARTEQ Innovations is the not-for-profit technology transfer office founded by Queen's University. It works with institutional researchers, industry, and the business and venture capital communities to bring early-stage technologies to market.

Clariant Oil Services to Acquire Champion Technologies' Deep Water Gulf of Mexico Assets

Clariant, a world leader in Specialty Chemicals, has signed an agreement with Ecolab Inc. to acquire its deep water Gulf of Mexico assets. The divestment of the assets by Ecolab was a prerequisite by the U.S. Department of Justice for the approval of the acquisition of Champion Technologies. Financial details of the acquisition are not being disclosed. Clariant is entering into a series of agreements with Champion related to its deep water Gulf of Mexico business. The acquired assets include Champion Technologies' oil and gas production chemicals services in the deep water Gulf of Mexico. The transaction is complementary to the company's strategy to further expand its deep water operations in the region and globally.

In the News

PPG to Acquire Aerospace Coatings Producer

PPG Industries will acquire certain assets of Deft Inc., a privately-owned specialty coatings company based in Irvine, CA. Deft supplies "green" coatings systems, structural primers and military topcoats to the North American aviation industry. It also has smaller architectural and industrial coatings businesses. The transaction is expected to close later this year subject to customary closing conditions.

Bayer MS to Sell Off Resins Units

Bayer MaterialScience has announced plans to sell its global powder polyester resins business and its U.S.-based liquid polyester resins merchant business to Stepan Company. The sale was scheduled to be completed by June 1, 2013. Financial terms were not disclosed.

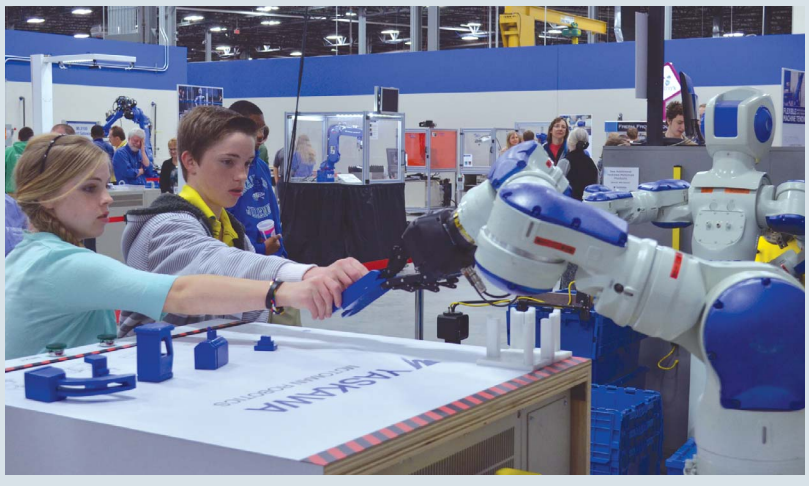
Both Bayer businesses are located in Columbus, GA. Stepan is headquartered in Northfield, IL. The company said it would retain its trade name Desmophen to continue to sell the portfolio of products, including coatings, adhesives, sealants and elastomers.

Dusatec Inc. Announces Acquisition

Dusatec Inc., Ramsey, NJ, has purchased the entire lines of TURBULENT mixers, reactors and dryers, Superflushers, and the GELIMAT thermo kinetic compounding machines, both batch and semi-continuous designs, from Buhler AG, Switzerland.

The product lines were assets taken over initially when Buhler AG acquired Draiswerke Inc. in 2010. The products did not fall into any existing strategic Buhler portfolio areas.

Dusatec Inc. is a newly formed company set up by the former owners of Draiswerke Inc. The new company brings full knowledge of the product lines and the potential growth areas for these products and technologies.



National Robotics Week

To celebrate National Robotics Week, Yaskawa America, Inc., Motoman Robotics Division invited student groups from local high schools and universities to take facility tours, speak with automation professionals, and interact with demos.

National Robotics Week was instituted by Congress as the second full week of April every year. 2013 marks the fourth year for National Robotics Week, and its stated purpose is to recognize robotics as a key technology for our nation's economy and, more importantly, to foster interest in the STEM (Science, Technology, Engineering and Mathematics) disciplines among students.

"We look forward to National Robotics Week each year. It gives us the opportunity to tell the story of robotics to high school and university students throughout the country," said Erik Nieves, technology director for Motoman Robotics. "It's our goal to inspire them to pursue a career in robots and automation."

Students were encouraged to become involved in STEM courses and learned about the roles they could play in the robotics industry. Job opportunities continue to grow as automation is implemented in more areas and robots are deployed in increasing numbers.

Universal Robots Reaches Across North America

Sixteen new distributors are now selling the innovative robots from Denmark to a diverse range of industries all over North America.

New Canadian distributor, Mark Schick, President of Advanced Motion & Controls Ltd., sees his company as pioneering the collaborative class robot in Canada. "We're excited about the market development and know this is a good thing for Canadian Manufacturers. This product is a game changer and will do for Canadian industry users what the ATM did to banking customers." He explains that the flexibility and portability of the robot is a perfect match for the country's diversified manufacturing base.

"Most of us envision more automation, safety and satisfaction within modern work environments as this new century unfolds. Universal Robots will help provide solutions that will make the Canadian industry leaner, smarter and more adaptive."

Universal Robots' two robotic arms, the UR5 and UR10, are the result of many years of intensive research in robotics. The six-axis robot arms can easily be implemented in many industries; from a small CNC lathe production to large automobile assembly lines.

The lightweight robots can work alongside personnel and require no safety shielding in 80 per cent of installations. The UR5 robotic arm was deemed "The world's most innovative robot" by The International Federation of Robotics and IEEE Robotics and Automation Society in 2012.

Green Marketing & Business Practices Online Course

Based on strong demand from industry and past students, the Wood Manufacturing Council (WMC) along with the Centre for Advanced Wood Processing (CAWP) have developed an eight-week online Green Marketing & Business Practices course to complement the suite of eight existing online courses in the Management Skills Training Program.

These courses are designed for entrepreneurs, employees in management-track or supervisory-track roles, and/or employees looking to gain a better understanding of specific functions within their respective companies.

The new Green Marketing and Business Practices Course covers a wide range of material, in an effort to address the overall topic of green marketing. The course will introduce students to key points from a maximum range of topics outlined in the course layout and provide additional reading material for those interested in specific areas. Most of this material will be available online in HTML format, with the remainder available as downloadable PDF documents.

After completing this module, you should be able to:

- Define green marketing and sustainability
- Evaluate current operations in terms of green performance (separate the wheat from the chaff), e.g., identify what is being done and what is easy to do
- Incorporate green marketing strategies into your company's marketing plan
- Develop a business case for green marketing for your company or for a specific project based on green market segmentation
- Identify sources of environmental regulations including export regulations
- Describe current trends and expected changes in green marketing
- Produce ethical green claims and avoid "green-washing" attacks

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ACA Announces Availability of New, Updated Figures for its U.S. Paint and Coatings Industry Market Analysis: 2010-2015

The American Coatings Association (ACA) is pleased to announce the availability of updated figures for its U.S. Paint & Coatings Industry Market Analysis:

2010-2015. The discontinuation of the U.S. Census Bureau's Current Industrial Report program, which had collected and published quarterly and annual information on shipments of paints, coatings, and allied products (both dollars and gallons), has created an information gap and eliminated an important benchmark showing the state of the coatings industry; ACA is stepping up to provide industry accurate and timely data on the industry that will support their strategic decision-making, in a newly updated Executive Summary to its highly regarded U.S. Paint & Coatings Industry Market Analysis: 2010-2015. In addition, ACA is also providing an updated chapter on Mergers and Acquisitions within the industry that reviews and analyzes the major transactions that have occurred since the study was published in early 2012.

www.paint.org

Clariant and SK Capital Report on Progress of the Textile, Paper and Emulsions Activities Divestment

Clariant, a world leader in Specialty Chemicals, and SK Capital, a private investment firm with a disciplined focus on the specialty materials, chemicals and healthcare sectors, provided an update on the separation process of Textile Chemicals, Paper Specialties and Emulsions. Clariant announced that it agreed to sell the three businesses to SK Capital on 27 December 2012.

After closing of the transaction, the three businesses will be regrouped under a new company with the name of Archroma. Archroma will be a world leading supplier of products and solutions to the textile, paper, adhesives and coating industries with a turnover of CHF 1.2 billion and approximately 3,000 employees. The company will be headquartered in Switzerland, which will also host the leadership of Archroma Paper Solutions. Archroma Textile Specialties will be managed from Singapore and Archroma Emulsions Products will be managed from Brazil.

The operational and legal separation, including the incorporation of legal entities, licensing and registration activities, the establishment of IT systems, and development of infrastructure and support services as well as ensuring a seamless transition for the Archroma employees is proceeding well.

An important aspect in establishing the new company is obtaining merger control and governmental approvals and authorizations, several of which remain pending. To ensure a successful separation process that minimizes disruption for both customers and employees, Clariant and SK Capital have targeted a closing of the transaction at the end of the 3rd quarter of 2013.

Industry News

ASC Questions Environment Canada's Proposed Use of California VOC-Reduction Rule

The Adhesive and Sealant Council (ASC) has submitted comments to Environment Canada (EC) raising questions with a proposed approach that would set VOC limits for a range of consumer products based on the California Air Resources Board's (CARB) rules.

In January, EC published a Consultation Document that is expected to lead to a proposed rule in 2014 establishing VOC limits for consumer products, including several adhesive and sealant categories, throughout Canada. A rule is expected to be finalized in 2016.

"The EC states in their Consultation Document that they are looking to align their VOC regulation with the United States," said Mark Collatz, ASC's Director of Regulatory Affairs. "Yet they are basing their present assumptions on the regulations of single state rather than looking at how the other 49 states are addressing VOC limits for these types of products."

ASC cited an example of sealants where the present California regulations mandate a limit of three per cent for chemically cured products and 1.5 percent for those non-chemically cured, while regulations throughout the rest of the United States are four percent for all sealant categories.

As an alternative, ASC suggested that EC consider adopting the Ozone Transport Commissions (OTC) Model Rule limits, which were recently amended and will come into force in January 2014. The OTC is an organization representing 11 northeast and mid-Atlantic states that have a responsibility for developing regional solutions to ground-level ozone in their individual jurisdictions.

"Using a regulatory approach adopted by multiple states, several of which border Canada, seems to be a better way to address the challenge of regulatory alignment between our two countries," said Collatz.

Other areas that ASC addressed in its comments included a suggestion for more specific definitions for consumer products that differentiate between "household" and "institutional" categories, the elimination of acoustical sealants from the proposal, and changes in record-keeping requirements.

Global Consumption of Radiation-Cured Coatings, Inks and Adhesives

According to the study, The Global Radiation-Cured Products Industry, by the consulting firm Kusumgar, Nerlfi & Growney, the global consumption of radiation-cured coatings, inks and adhesives was 868 million pounds in 2012 worth $4,495 million. The largest outlet was coatings with 78 per cent of the volume and 58 per cent of the value. Wood and overprints are the leading coating end uses taking nearly three-quarters of the volume and 60 per cent of the dollars. A variety of plastic applications such as vinyl flooring, consumer electronic housings, automotive headlamp lenses and housings, CDs, etc. took 18 per cent of the coating pounds and 24 per cent of the dollars. Optical fibers and cables were the fourth largest end use. The above four end uses represent 95 per cent of the coating pounds and 93 per cent of the dollars.

The ink industry consumed 18 per cent of the radcure product volume and 35 per cent of the value in 2012. If one were to combine inks with overprint coatings into a graphic arts category it would represent 41 per cent of the pounds and 48 per cent of the dollars. The offset process took nearly one-half of the ink volume and 43 per cent of the dollars. The fastest growing radcure ink process is inkjet which is forecast to more than double in volume by 2017. Inkjet was only 3 per cent of the volume in 2012 but 11 per cent of the value.

The adhesives industry was 4 per cent of the radcure product volume in 2012 and 7 per cent of the dollars. Product assembly adhesives for electronic, medical, and other applications were only

13 per cent of the adhesive pounds but are generally much higher in price than other end uses and they garnered just over one-half of the dollars. Pressure sensitive, packaging laminating, and DVD lamination are the large volume adhesive applications.

The Asia-Pacific region leads in radcure product consumption with 35 per cent of the global dollars in 2012. It is the fastest growing region at 10 per cent/yr and its share of the volume is projected to increase from 40 per cent in 2012 to 47 per cent in 2017. Europe and North America each represented 35 per cent of the radcure dollars in 2012. Europe captured 31 per cent of the global volume and North America 26 per cent. Both regions are forecast to grow at a modest 3-4 per cent annual rate.

Raw material consumption for radcure products was $2.3 billion in 2012. Acrylate oligomers and monomers are the leading material comprising about three-quarters of the material volume and dollars. A variety of other resins are employed in radcure products and were 10 per cent of the pounds and 8 per cent of the dollars. Photoinitiators are on average a higher priced ingredient and were 4 per cent of the pounds and 8 per cent of the dollars. Other ingredients include additives, pigments and fillers.

www.kusumgar-nerlfi-growney.com.

Industrial Fire Rips Through Industrial Coatings Plant in East Edmonton – 1M Worth of Damage

On Saturday, April 20, 2013, the workers at the Integrated Protective Coatings' (IPC) facility in Edmonton, Alberta were forced to evacuate the premises as a large scale fire ripped through the factory shortly before 5 am. According to sources, a passerby noticed smoke and flames emanating from the building around 4:40 am and quickly called the police. The fire spread quickly through the northern quadrant of the facility. Because of the severity of the blaze, the fire was escalated to a 'second alarm' fire at 5:25 am.

Jim Henderson, the district chief of the fire department, was quoted by several sources in his report. There were eleven units called to handle the blaze, totaling sixty firefighters at once on the scene. Even with the large number of firefighters, the fire was only brought under control several hours later at 7:40 am, and while no injuries have been reported, the company has stated that its coating facility has 'suffered major damage.'

Firefighters notified Alberta Environment immediately because of chemicals in the building. Luckily, the wind aided the campaign.

"Wind blew the smoke over open fields southwest of the industrial area and there was no danger to the public," says Henderson.

While the fighters fought the blaze, hazardous material crews tested the water runoff and said the tests came back neutral, meaning that the threat to the public was removed.

"It [the paint thinner and coating agents] more or less burns off," states Henderson.

The same, however, could not be said of the facility.

"It's a total loss," says Henderson. "There was lots of paint thinners, that kind of thing. It was a protective coating plant. Because it's fairly toxic smoke, everybody had to be on air tanks. The guys tried (to go inside) at first, but then it was decided to be a defensive fire attack."

While every firefighting strategy is called an 'attack,' 'defensive fire attack' is performed when it is decided to allow the fire burn itself out, and that the building is beyond saving. This can mean imminent collapses (which occurred with the building's ceiling during the fight) or special hazards such as chemicals. Other instances where a defensive strategy is preferred occurs when there is concern over rapid fire spreading to nearby buildings, where it would more value to stop the fire from spreading and damaging a larger area.

The downside often associated with defensive fire attack is that it takes a longer time to eliminate the fire as opposed to some cases with aggressive fire attacks. In this case, although the fire was declared 'under control' around 7:40 am, crews remained on site for much of the day dousing flames and overhauling the structure. Police closed off the immediate area until the firefighters were finished.

It was not until 6:03 pm that the fire was declared to be completely out and normal traffic resumed.

According to fire department spokeswoman, Karen Burgess, fire investigators estimate the fire caused a minimum of 1 million dollars worth of damage to the business and its contents.

Integrated Protective Coatings Inc. made an official statement in a letter posted to its website.

"We must report to all of our customers that in the early morning of Saturday April 20 a fire destroyed the north end of our coating facility in Edmonton." The company went on to thank firefighters for their efforts and said its electroless nickel coating bays, "were relatively unaffected."

When addressing the future, IPC representatives, including company president Bob Frankie, are dealing with it as quickly as possible so that the rebuilding process can begin. Their press release states, "They [IPC Senior Management] are currently working with the Edmonton Fire Department Investigators and our insurance representatives. Our Senior Management team will be meeting through the weekend to finalize our contingency plans. Rest assured that we are evaluating options to mitigate any business interruptions in the short term. As soon as we have finalized our go forward plan and have determined what current orders have been affected, we will communicate it to all our customers. We anticipate being operational in our ENC division by mid week, and our Polymer division by late in the week."

Frankie went on to say that the company would certainly rebuild, but may be considering a different location for such an endeavor.

"We're a growing, thriving business with a great product, with great staff, great people so, absolutely."

IPC is an industry leader in high performance propriety Electroless Nickel and Polymer coatings. Headquartered in Edmonton, Alberta, IPC has over 35 years of experience in the global oil and gas sector. IPC offers facilities in Alberta and Tianjin, China to meet a growing global need for a proven high performance coating solution, which will perform in the harshest, most extreme environments.

United States Green Lights New International Bridge between Windsor, Ontario and Detroit

Cheers came from both sides of the border last April as President Obama signed a Presidential Permit to begin the process to construct a new one billion dollar bridge between the Canada and the United States. This is the final political green light that was thought to be required for the project.

Both the Canadian Vehicle Manufacturers' Association (CVMA) and the American Automotive Policy Council (AAPC) presidents have been quoted on their respective companies' websites in response to the permit.

CVMA President Mark Nantais states, "We have long supported additional international infrastructure capacity in the Windsor-Detroit gateway because it is a critical trade corridor that supports automotive manufacturing and jobs in both Canada and the United States."

AAPC President Matt Blunt adds, "The scale of trade in automotive products between the United States and Canada is unequalled anywhere else in the world and the seamless nature of the auto manufacturing industry that straddles our border, requires the necessary infrastructure that this bridge represents."

The project, officially called the 'New International Trade Crossing', will be entirely funded by Canada and repaid through tolls. The State Department believes that the crossing will serve the national interest, helping to meet future capacity requirements in a critical travel corridor, as well as promote trade and commerce between the United States and Canada.

Nantais and Blunt states further on the CVMA site that "with the highly integrated automotive industry between Canada and the United States, automotive trade is worth roughly $100 Billion annually, with the majority of production parts and finished vehicles flowing through the Windsor-Detroit gateway. "As a result, the New International Trade Crossing will help make the region more attractive for future jobs and economic growth. The new crossing will help boost the competiveness of the North American automotive industry and add 8,000 permanent jobs, according to an independent economic study just completed by the Center for Automotive Research".

But the new construction is not without its critics and oppositions. The owner of the existing Ambassador Bridge (which connects Windsor, Ontario to Detroit, Michigan), Manuel 'Matty' Moroun has reportedly filed a lawsuit against the United States Government Departments as well as the Canadian Government, citing his ownership of 'perpetual and exclusive franchise right' to operate the international crossings free of competition from another company. This was based on agreements signed in the 1920s by the US Congress and Canadian Parliament when Moroun's company built the Ambassador Bridge. They believe that the new bridge will force the Ambassador Bridge to lose a large percentage of its business if there exists another span.

The construction is projected to cost the Canadian government about 1.5 billion dollars upfront. Of that, 550 million has already been advanced by Ottawa to cover the Michigan portion. This will be returned to Canada through tollbooths in about 25 years. It is estimated that about 130 billion dollars worth of goods cross the

border annually at the Detroit-Windsor border, carried mainly by some 2.7 million transports that cross the bridge. By 2035, however, such crossings are expected to more than double, making a second bridge not only a matter of convenience, but a necessity.

"This new crossing will finish a much needed uninterrupted link between Ontario's 400 series highways, the future Windsor-Essex Parkway and Michigan's interstates and provides an option that we believe necessary in such a critical trade corridor. We are hopeful that both governments will proceed toward final design and construction without delay," concludes Nantais on the company's website.

But that's not stopping Moroun's lawyers. He has already named the US Department of State, Transportation, Coast Guard, Homeland Security, and the entire Canadian government in his sweeping lawsuit.

Ken Silfven, spokesman for Michigan Govenor Rick Snyder, announced in a press release that "no one should be surprised by this. It seems to be how they operate. But dealying jobs for working families isn't in their best interests or Michigan's. When all is said and done, we believe the bridge will be build to the benefit of Michigan and Canada."

But for now, perhaps Moroun's lawsuit is achieving precisely what he wants it to, forcing delays into the construction of the new bridge.

The new span is planned to cross the Detroit River about three kilometres south of the Ambassador Bridge from the Delray neighbourhood connecting to the Brighton Beach neighbourhood in Windsor.

The Canadian Vehicle Manufacturers' Association is the industry association that has represented Canada's leading manufacturers of light and heavy duty motor vehicles for more than 80 years. Its membership includes Chrysler Canada Inc.; Ford Motor Company of Canada, Limited; and, General Motors of Canada Limited. Collectively its members account for 63 per cent of vehicles produced in Canada, operate 5 vehicle assembly plants as well as engine and components plants, and have over 1,300 dealerships. 120,000 jobs are directly tied to vehicle assembly in Canada. www.cvma.ca.

Canadian Apprenticeship Journal: Engaging Youth in the Trades

With an aging skilled trades workforce and ongoing requirements for skilled trades people to keep Canada's construction, motive power, industrial and service sectors running, attracting youth to the skilled trades is essential. Across Canada, organizations and individuals are undertaking initiatives to address this pressing issue. In the latest issue of the Canadian Apprenticeship Journal, authors and practitioners from across Canada showcase successes and share thought-provoking ideas.

The Canadian Apprenticeship Journal is published by the Canadian Apprenticeship Forum. The publication allows researchers, educators, stakeholders and decision-makers to share insights and perspectives around identified apprenticeship topics.

In this issue – the most comprehensive to-date – several common themes and insights emerged:

- Encouraging the trades as a career option needs to be accompanied by clear pathways into these jobs
- Women, Aboriginal people, visible minorities and persons with disabilities all represent labour supply sources that are not fully utilized
- Ongoing program evaluation and measurement is required to ensure investments contribute to certification of more journeypersons – the ultimate objective of recruitment efforts

"Youth need to be aware of the options, especially in high-demand markets like the skilled trades," says Richard Wiggers, the Higher Education Quality Council of Ontario's executive director of research and programs. "The ongoing challenge for Ontario is apprenticeship retention and completion, and that is the catalyst for many HEQCO-funded research projects. It also prompted us to sponsor this edition of the Canadian Apprenticeship Journal."

The Canadian Apprenticeship Forum is a non-profit organization working with the apprenticeship community in all regions of Canada to provide an effective national voice. Participants work collaboratively to support vibrant and innovative apprenticeship systems and policies, with a view to developing a highly-skilled, inclusive and mobile skilled trades workforce. More information and the latest issue of the Journal are available at www.caf-fca.org.

The spring 2013 issue of the Canadian Apprenticeship Journal was funded by the Ontario Human Capital Research and Innovation Fund (OHCRIF), created by the Ministry of Training, Colleges and Universities to support research activities that improve labour market participation of Ontarians.

People

New at Hero

HERO Products Group, a leading manufacturer of equipment for the Paint Industry headquartered in Canada, has appointed two new sales agencies.

In the province of Ontario, The Paint Channel led by Mike Caspar (President) has been appointed. This agency has three full-time dedicated associates to service the paint industry with a combined experience of over more than 20 years.

In the province of Quebec, Mario Goulet has been appointed. This French speaking representative provides over 25 years of experience in the paint industry. HERO Products is confident these two additions to its sales team will consistently reinforce its message of providing the finest solution toward the color delivery process within your paint departments. The company's main objective is to provide equipment inclusive of the latest technologies, with the smallest footprint and self-service capabilities.

www.thepaintchannel.com

Gelest Bolsters its Product, Facilities and Business Management to Ensure Continued Success

Gelest, Inc. is pleased to announce new appointments and promotions it has recently made to drive and support its successful growth as a manufacturer and supplier of silane, silicone and metal-organic compounds to the global marketplace.

Greg Hertenberger has joined Gelest as Product Manager Silanes and Metal-Organics. His responsibilities include development of new business for Gelest's wide range of functional and non-functional alkyl silane compounds and for the company's greatly expanded range of metal-organic compounds for materials, polymers and


Adrien Salomon


Greg Hertenberger


Greg Vuk


Matthew Suits


Sean Nichols


William Fry

synthesis. Hertenberger brings more than 30 years of experience in additives for coatings and construction products, including silanes and biocides, which he gained from serving in key technical, commercial and management positions with Petrarch Systems, Huls America, Degussa, International Specialty Products, and Ashland Specialty Ingredients.

Sean Nichols has joined Gelest as Purchasing Manager, responsible for the procurement of raw materials for Gelest's manufacturing operations. He came to the company following a five-year tenure as Operations Manager in the manufacturing division of Haas Group International, based in West Chester, Pa. Prior to his promotion to Operations Manager, Nichols worked as an R&D Chemist and as a Purchasing Manager.

Adrien Salomon has been promoted to Production Manager, with responsibility for managing day-to-day production activities and staff. He joined Gelest in 2004 as a Chemist after earning a Bachelor of Science degree in Chemical Engineering from the University of Delaware.

William Fry, who came to Gelest in 2010 as Assistant Controller, has been promoted to Controller. Prior to joining Gelest, he gained consider-

able experience in the auditing of manufacturing, distribution, construction, and not-for-profit organizations as a Senior Accountant for several accounting firms.

Greg Vuk, who started with Gelest as a packer in 1999, has been promoted to Logistics Manager. Since joining Gelest, he has taken on positions of increased responsibility, including laboratory assistant, shipper, traffic manager, and shipping/receiving packaging supervisor. Vuk majored in Chemistry at Millersville University.

Personnel Update from Wagner Industrial Solutions

Wagner Industrial Solutions, a global leader in liquid and powder coating application technology, announces the following four hires to its team:

Joseph Glassco has joined Wagner as a Regional Sales Manager. He brings over 27 years in the coatings industry, with both major equipment and powder coating manufacturers, and he holds a degree in Industrial Engineering.

Randy Krawiec has joined Wagner as a Liquid Technician. He brings over 30 years of knowledge in both equipment and coating. He will support customer installations, provide technical assistance, and manage the liquid lab at the Elgin, IL facility.


Joseph Glassco


Megan Boydston


Randy Krawiec


Tony Lindlow

Tony Lindlow has joined Wagner as SE Regional Service Technician. He brings over 3 years of experience in both pretreatment and powder coating technologies, and will provide better service to distribution channels in the Southeastern US.

Megan Boydston joins Wagner as Marketing Administrator/Internal Sales Support. With her strong background in administration, sales and marketing, and customer relations, she is poised to successfully support this fast growing sector.

Axalta Coating Systems Announces New Technical Service Manager for Powder Coatings Business

Axalta Powder Coatings (formerly DuPont Powder Coatings) announces the assignment of Michael A. Wittenhagen as Technical Service Manager. He brings over 20 years of powder coating experience to this position, including 14 years with DuPont & Herberts-O'Brien and most recently with The Powder Coating Institute, based in The Woodlands, TX.

The Technical Service group that Wittenhagan joins will begin reporting through the Powder Sales organization and he will report directly to Joseph Friesl, North America Powder Sales Effectiveness and Business Development Leader.

Axalta Coating Systems is a leading global provider of liquid and powder coatings to automotive OEM and Refinish, other transportation, general industrial and selected architectural and decorative customers. Top selling global liquid coating brands for the refinish sector are DuPont Refinish, Standox and Spies Hecker.

Ron Bader Appointed Director of Sales, Enthone North America

Ron Bader has been appointed Director of Sales, North America by Enthone Inc.

Prior to joining Enthone, Bader was with Dow Chemical where he most recently served as the company's Midwestern US sales director. His extensive career spans three decades and includes management positions in electronics materials marketing and sales excellence. Bader was instrumental in creating and implementing sales incentive plans, pipeline and management training, as well as establishing sales best practices. He also implemented strategic selling programs that dramatically increased business growth and strengthened customer satisfaction and retention.


Ron Bader

Bader will travel extensively throughout the US, Canada and Mexico and will be based out of Chicago, IL. He earned a bachelor's degree in chemistry from Chaffey College in California.

Pricing Updates

Troy Announces Price Increase for Micropel Products

Troy Corp. has announced an increase in prices of Micropel OBPA-based antimicrobial products by up to 9 percent effective May 15, 2013, or as contracts allow.

Customers interested in learning more about the price increase should contact their local Troy Micropel sales representative.

Oxea Announces Price Increases

Oxea has increased list and off-list prices on certain polyols and carboxylic acids effective April 1, 2013, or as contracts allow.

In North America neopentylglycol and trimethylolpropane will increase $0.10/lb, and 1,3-butylene glycol will increase $0.06/lb.

Also in North America, n-heptanoic acid will increase $0.04/lb., and n-pelargonic acid will increase $0.06/lb.

In Europe, 2 ethyl hexanoic acid, n-butyric acid and isobutyric acid will increase EUR 50/to, n-heptanoic acid will increase EUR 60/to, and n-pelargonic acid will increase 90/to. In the rest of the world, n-butyric acid and isobutyric acid will increase $60/to, n-heptanoic acid will increase $80/to, and n-pelargonic acid will increase $120/to.

Federal Government Proceeds with PSSA Stream 4 Sub-Grouping

Health Canada and Environment Canada (HC/EC) have almost finished compiling the Section 71 survey data for Petroleum Sector Stream Approach (PSSA) Stream 4. Stream 4 addresses substances that maybe present in products available to the consumers. The Government confirmed they received 233 submissions and 43 stakeholder interest forms on the substances of interest. Eleven sub-groupings have been identified for risk assessment and possible risk management. CPCA's last Paint and Coatings Working Group meeting with the federal government on April 10 produced a detailed list of CAS numbers contained in each subgrouping for the paint and coatings sector. This, in turn, was provided to CPCA's Health, Safety & Environment committee members for further analysis and input.

CPCA was asked to review the proposed sub-grouping strategy and raise any potential issues of concern for the sector. CPCA members were given limited time to provide input. There were no formal consultations on the sub-grouping exercise with other stakeholders prior to beginning the Draft Risk Assessment. Health Canada and Environment Canada used a similar chemical grouping strategy as the one determined in conjunction with the CMP Petroleum Working Group in the context of PSSA1, PSSA2 and PSSA3.

The federal government indicated that the paint and coatings sector might be implicated in as many as 50 of the 63 substances contained in the Section 71 publication of December 17, 2011. Only four of the eleven groupings do not concern the paint manufacturing sector. Paint and coatings manufacturers further confirmed the use of substances in the following groupings: petroleum and refinery gases, highly refined base oils, gas oils, unrefined base oils, asphalt, low boiling point naphthas and solvents.

To further assist this risk assessment, an internal product database is being developed for each substance, which will be populated with MSDS/SDS for products that are available in the Canadian marketplace. CPCA and its members are watching closely as the process unfolds with respect to the PSSA Stream 4 risk assessment reports in 2014-2016.

CPCA Provides Preliminary Analysis to Environment Canada and OECD on Emissions Scenarios for Exposure Modeling

Several CPCA Architectural members of the PCWG proceeded with a preliminary analysis of the OECD ESD (Emission Scenarios) flowcharts for decorative paints shared by the Environment Canada (EC) Team Unit for Ecological Exposure in 2012. The ESDs originate from the OECD Emission Scenario Documents on Coatings Industry (Paints, Laquers and Varnishes) and are currently applied by EC in Canada. CPCA Architectural members have provided Environment Canada some indication of where potential flaws exist in the document. It also pointed out where there must be further investigation for some of the current OECD emission/release scenarios, especially with respect to Canadian manufacturing and use of architectural coatings.

For example, Environment Canada referred to the April 2011 large-scale report published by Recyc-Quebec, which was based on 2010 scientific data related to the recovery quantity and rate of DIY paint residues per type of paint and container size. This unique Quebec study demonstrates that a "global" average percentage of paint left in cans (for all formats) is 10.48% for DIYers and 1.16% for professionals. CPCA recommended using these numbers for Canada, rather than the actual OECD ESD assumptions of 25% for DIYers and 3% for professionals. Other CPCA comments pointed out questionable parameters used for estimating paint brush residues, service life and useful life. At the April 10th PCWG meeting, Environment Canada officials expressed their appreciation of the comments on Architectural ESDs. They have asked for similar feedback for other coatings categories used in the model such as, powder, polyurethane, wood, and metal. Environment Canada took immediate action and forwarded CPCA's comments to the OECD. If you would like to contribute to a preliminary analysis of the ESD charts for any category, please contact Lysane Lavoie at CPCA.
llavoie@cdnpaint.org

Follow-up on Batch 7 MEKO Submissions

The federal government received 5 submissions on the proposed Code of Practice resulting from its publication in the Canada Gazette I. Comments mainly focused on best practices and label statements (Section 10), record keeping and reporting. Health Canada confirmed that such a Code should not be considered a multi-substance risk management tool. One suggestion by another association focused on the need to address risk management for MEKO under the existing Canadian Consumer Product Safety Act (CCPSA).

It must be noted that exempting these compounds in Schedule 1 of CEPA 1999 does not preclude their future management for other reasons, such as climate change or their inherent toxicity to human health or the environment.

Health Canada and Environment Canada will discuss potential changes to the proposed Code of Practice as a result of these public comments from stakeholders in the coming weeks. The final Code will now be published in the fall of 2013. More information on this effort can be obtained at www.cndpaint.org.

Schedule I Amendment of VOC-Exempt Compounds List

Following CPCA's comments and recommendations on potential Schedule I amendments, Environment Canada reassured the CPCA Paint and Coatings Working Group (PCWG) that alternative actions would be taken to exempt certain substances used in consumer products if not done so in Schedule 1. These substances would include TBAC, DMC (dimethyl carbonate), and PC (propylene carbonate) and they would be exempted within the VOC Regulation itself. This is acceptable as it would be the same outcome and use of these substances will continue to further reduce VOC emissions.

The consultation document to amend Schedule I list of VOC-compounds, adding 13 new compounds, will be made public in May or June of 2013. A 30-day comment period will follow. Comments will be analyzed and the final text will then appear in Orders to be published in Canada Gazette I and II. The government recognized the need to find ways to speed up any further updating of the Schedule I list of VOC-exempt compounds, as it has taken nine years for all government departments to come this far.

It must be noted that exempting these compounds in Schedule 1 of CEPA 1999 does not preclude their future management for other reasons, such as climate change or their inherent toxicity to human health or the environment.

Environment Canada Analyzing Industry Comments on the Proposed Revised VOC Regulation for Certain Products

Comments were received from 10 associations and 15 companies, three NGOs and one consultant. Stakeholder comments diverged on a number of topics and Environment Canada will work with all stakeholders in an effort to strike an appropriate balance among competing interests.

Once again CPCA was first to be consulted by Environment Canada after the deadline for submissions and has already responded to several CPCA comments and questions, as follows:

- Environment Canada is limited in the definitions it can adopt from other regulations already passed under CEPA and elsewhere. Regulatory drafting conventions do not always allow for 'verbatim' adoption of definitions used in other jurisdictions.
- Separate guidance materials will be published later to identify test methods for use by the government to verify regulatory compliance.
- Environment Canada is still proposing to exclude low vapour pressure VOCs (LVP-VOCs) for products other than antiperspirants and deodorants, to be in alignment with California's existing exemption.
- The voluntary survey should be launched by Environment Canada within the next few weeks. The survey design was submitted to CEPA-ICG for acceptance.
- EC reconfirmed the timelines for publication: Gazette Part I in Summer 2014, Gazette Part II in Summer 2015 followed by a two-and-a-half-year stop-manufacturing period allowing non-compliant products to be sold on the market (January 1, 2018). More information can be obtained on the website, www.cdnpaint.org where you will find a synopsis of CPCA's formal submission. The full submission is on the Members Only section of the website.

Consultation on the Combined VOC Approach

The federal government noted that it felt industry had misunderstood the purpose of combining the three VOC regulations, that is, the two pervious VOC regulations for architectural coatings and auto refinishing coatings in 2009. Their intent is to create a very short common section as a way to clarify the various aspects of the regulations for increased clarity. As well, the intent is to indicate that information on products and companies receiving permits will be available to the public in an effort to increase transparency, and, where possible, to remove sellers from the list of those regulated. This section will not contain any definitions that might alter the intended outcomes of the legislation. CPCA was informed that these changes are intended to clarify the full intent of those regulations and nothing more. CPCA had expressed concern with combining all three regulations and will wait to see the actual wording before taking further action.

CPCA to Obtain a Copy of the Automotive Refinish Compliance Assessment Report

Environment Canada has agreed to share the consultant's report on the evaluation of compliance with respect to the Automotive Refinish VOC Regulations. This is an internal report that will not be publicly accessible. However, it will be useful to help inform both government and industry on progress made with respect to implementation of the regulations.

IPPIC Global Market Analysis Update

At the last IPPIC meeting, Orr & Boss presented the highlights of its December 2012 global market analysis, which is now available for purchase. Orr & Boss predicts that global coatings will grow from $106 billion (value) and 33 billion liters (volume) in 2011 to $144 billion (value) and 43 billion (volume) in 2016. The trend of consolidation and the challenges faced by SME's is expected to continue. The IPPIC President proposed a local or global seminar for SME's on innovation and product development that was approved. IPPIC also agreed to expand communication on the global importance of the coatings industry market for addressing governmental inquiries.

(Complete details on the above information is archived on the Members Only section at www.cdnpaint.org.)

continued from front cover

They work closely with their customers and exchange information and knowledge, and their research and development teams devise solutions such as paints that are easier to use, faster to cure and allow you to easily recycle overspray.

Moving away from solventborne resins, manufacturers are now creating paints that are based on water with comparable qualities. That means they are better for the user and better for the environment. And because they are waterborne, it also means spray equipment needs just a brief rinse, and it is ready to use again. That means less fuss and less waste. Waterborne resins can be used in paints and coatings that cover end markets like automotive parts, the construction industry, machinery and equipment, drums, domestic appliances and metal furniture. The maintenance/protective industry uses a dual-layered coating system consisting of a primer and a solid color topcoat. Applications that need special properties now use two-pack systems. These solid color two-pack paints are based mainly on hydroxy acrylic resins cross-linked with aliphatic polyisocyanates. Resins with high hydroxyl content deliver a denser cross-linked chemical structure with improved performance like good physical drying, film hardness, toughness and resistance to chemicals and UV.

Some manufacturers have introduced a novel waterborne one-pack (1K) epoxy resin based on cationic epoxy-amine technology that provides a very high level of corrosion resistance. It helps to bridge the performance gap between traditional 1K alkyd and acrylics and the high corrosion resistance of two –pack (2K) epoxy systems In addition, these new resins have a very low VOC content, has no pot life issues, is fast drying, and does not contain a sensitizing amine hardener.

Manufacturers have also developed waterborne acrylic resins that can be used for high performance and low VOC industrial maintenance coatings. It They imparts excellent durability, film gloss, adhesion, chemical and solvent resistance, and corrosion control to primers, topcoats and finishes for most concrete and metal surfaces. These resins are designed to be versatile and robust while helping create primers with volume solids above conventional waterborne binders.

About 30 years ago, chemists began formulating waterborne epoxy resins and curing agents, which could be formulated at significantly lower VOC levels than solvent based epoxy coatings. The technical problem, which arises, is that bisphenol A epoxy resins are rather hydrophobic, and do not readily disperse in water. Therefore, surfactants were developed which would disperse these hydrophobic resins in water. The first generation (Type 1) waterborne epoxy resins are liquid epoxy resins dispersed in water using appropriate surfactants. Curing agents are generally water soluble amines. Often, the curing agents are salted with an acid to enhance water solubility. The use of surfactants and water soluble amines result in coating films, which are relatively hydrophilic. As such, they do not provide good corrosion resistance when applied to metallic substrates. THowever, they are, however, very useful when applied to non- metallic substrates, such as flooring or masonry. The weakness of their poor hydrophobicity is not evident in these applications. Coatings formulated with these materials can achieve zero VOC.

About 30 years ago, chemists began formulating waterborne epoxy resins and curing agents, which could be formulated at significantly lower VOC levels than solvent based epoxy coatings.

The next generation (Type 2) waterborne resins are dispersions of solid epoxy resins in water. These generally require the use of cosolvents as coalescing aids in the film formation process, so very low VOC levels are more difficult to achieve. Water soluble amines are generally used as curing agents. The performance of the Type 2 system is improved over Type 1. This is due largely to lower curing agent demand by the higher molecular weight solid resin. The curing agent is the most hydrophilic part of the system. However, the corrosion resistance is still weak (compared to osolvent borne epoxy coatings), so they could only be used for light-duty metal primers or for non-metallic substrates.

The next generation (Type 3) is comprised of a liquid or solid epoxy dispersion, and a carboxyl-functional acrylic dispersion. This kind of system provides improved weathering characteristics by being more resistant to yellowing and chalking than standard epoxy systems. However, these coatings do not exhibit the excellent corrosion resistance when applied to metal substrates, so they are most useful for topcoats.

Type 4 waterborne epoxies are liquid or liquid emulsions cured with amine dispersions. These give good performance on floors or masonry, but give weak performance on metal.

For 25 years, waterborne epoxy technology was represented by one or more of these system types. None of them give corrosion protection to metal as good as solvent based epoxy coatings. So the myth developed that it is not possible to formulate waterborne epoxy coatings that will perform as well as solvent based systems. The fact that hydrophilic surfactants are required to disperse epoxy resins and curing agents in water provided technical justification for this myth. Using the principals previously summarized, the Type 5 waterborne epoxy was used to formulate a white enamel, a white primer, and a red iron oxide primer. Type 5 Epoxy System –the latest generation of waterborne epoxy was developed using a "1-type" (epoxy equivalent weight of about 500–600) solid epoxy dispersion, and a hydrophobic amine adduct curing agent. Both components utilize a proprietary, non-ionic surfactant that is pre-reacted into the epoxy and amine components.

Waterborne resins are the solution to creating paints and coatings suitable for the environmentally friendly marketplace.

High Standards

for Paint and Coatings in Canada

By Gary LeRoux

Role of Standards

Throughout Canada, there are references to ASTM, CGSB, CSA and MPI standards on many construction projects, especially government run or government funded organizations such as hospitals, libraries, civic centres, public works projects, military, etc. Many Canadian architects, including those working for governments, reference American Society for Testing Materials (ASTM) and Master Painters Institute (MPI) standards regularly. For MPI, some have suggested it is close to 70 percent in Canada, while in the US, it is pegged at around 30 percent. There are problems with standards because architects in both the private and public sectors still specify alkyd categories for many projects. However the products are often not available due to new VOC regulations for architectural coatings introduced for more than 50 product categories in Canada in 2009. More about these standard-setting organizations will be discussed later, as well as the role they play in the industry.

A 'standard' is defined as something considered by an authority as a basis of comparison; or an approved principle used as a basis for judgment related to specific requirements, quality, quantity, level, grade, etc. Government regulations created under an Act of Parliament is only one way of setting a standard in terms of environmental, health and safety limits. Long before regulations, the Canadian paint and coatings industry met a number of standards by voluntarily adhering to best practices for health and safety under the globally recognized code called, `Coatings Care`. The Coatings Care program is governed by an international organization for which program recognition exists in many countries. It works in parallel with existing national and international standards like the International Standards Organization (ISO) to further ensure cohesion and conformity within the paint industry worldwide. It is more a ''corporate engagement and accreditation'' program than ''product accreditation.'' This program exists to further reassure consumers of the corporate responsibility of the manufacturer. The Coatings Care program in Canada was developed by the International Paint and Printing Ink Council (IPPIC) organization and adapted to the North American and Canadian regulatory context. IPPIC has continued to improve this program and just recently begun work on the development of a ''sustainability standard'' within the paint and coatings industry.''

During this time, industry also voluntarily reduced VOC limits in products by more than 50 percent. The Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations passed in 2009 led to further reductions targeting an additional 30 percent. While these regulations set the bar for environmental targets, they do not set standards in terms of quality or performance. In fact, in many cases they do just the opposite. Often lower VOC limits negatively impact performance for some surface applications thereby requiring reformulation to enhance efficacy. Even with drastic reductions in VOC emissions, the paint and coatings industry continued to establish high performance standards in products for do-it-yourself (DIY) consumers as well as commercial and industrial customers.

On the front line of standard setting in the paint and coatings industry are the manufacturers themselves. Coatings manufactures operate in a highly competitive marketplace and, to succeed, they are continually investing in new solutions, steeped in sound chemistry and strong technological innovation. These solutions must provide a good balance between economic considerations and practical technology applications with the following finished product characteristics: ease of manufacturing, acceptable raw material costs, reasonably priced manufacturing equipment, high quality coatings, ease of application, and all achieved with reasonable labour costs.

In the paint contracting industry, at the application end of the spectrum, standards are also critical. For example, contractors bidding a three-coat paint job will apply three coats at a specified price. Without painting standards (and no third party inspection) competitors may bid three coats, but the purchaser may only get two coats. Standards clarify what the purchaser wants and what the seller delivers. Standards are required for both the product as well as the application for maximum results. The intent of good standards is to level the playing field for all. The paint contracting industry has come a long way, with professional paint contractors making significant strides in both their knowledge and professionalism led by organizations such as the Ontario Paint Contractors Association.

Standard setting for paint contractors is further enhanced by the Society for Protective Coatings (SSPC) based in the United States and Master Painters Institute (MPI) based in Vancouver. The SSPC is focused on the protection and preservation of concrete, steel and other industrial and marine structures and surfaces through the use of high-performance protective, marine and industrial coatings. SSPC is a leading source of information on surface preparation, coating selection, coating application as well as the related health and safety issues impacting the protective coatings industry. SSPC's core products and services include: coatings industry standards, technical specifications, training and certification courses and painting contractor certification programs,

Canadian Standards Organizations

What about the standards setting organizations in Canada? The Standards Council of Canada (SCC) has responsibility for coordination of the National Standards System (NSS) in Canada. It has accredited the Canadian Standards Association (CSA) as

one of five accredited organizations in the country. The other four are the Canadian General Standards Board (CGSB), Bureau de normalisation du Quebec (BNQ), American Society for Testing and Materials (ASTM) and Underwriters Laboratories. Standards are implemented for a number of valid reasons including: meeting or exceeding customer needs, addressing marketplace demands, ensuring consumer confidence, complying with regulations and implementing industry best practices.

The SCC is currently exploring new avenues of harmonization to facilitate greater harmonization of standards where one or more SCC-accredited Standards Development Organizations (SDO) from Canada and one or more SDO from the United States develop a harmonized Canada-US standard. SCC has observed that a growing number of standards originating from US-based organizations (such as ASTM and NFPA) are referenced in Canadian federal regulations and even more at the provincial and territorial level. In a growing number of sectors, Canadians are choosing to participate directly in standards development activities outside of Canada. SCC has been working closely with the Government of Canada's 'Regulatory Cooperation Council (RCC) Secretariat' and key industry stakeholders to meet the RCC's goal of harmonization of technical standards between Canada and the U.S.

The SCC realized three important factors were at play: 1) the growing need for greater harmonization with the US with respect to standards; 2) that the CGSB no longer played an active role in standard setting in Canada for a number of sectors including paint and coatings; and 3) that many architects in Canada no longer follow CGSB standards. Many sectors, including paint and coatings, closely follow ASTM standards throughout Canada. As a result, on February 4, 2013, the SCC accredited ASTM to develop National Standards of Canada with an office established in Ottawa. The SCC said this move would provide "greater flexibility and increased opportunities to solve regulatory issues, harmonize standards, and improve trade." It should be noted that forty-eight of the latest ASTM standards provide a useful tool for personnel working in the field of coatings and allied products. Each standard contains a detailed description of the noted test method, procedure, or guide. This new compilation gives the paint and coatings industry easy access to the most frequently used ASTM standards.

CPCA was recently asked by the Standards Council of Canada to comment on its new initiative related to harmonization. After consulting with members, the Association submitted a formal response indicating that CPCA members are in favour of greater harmonization given that, 1) many ISO procedures for standards setting are duplicative in nature; and 2) the Canadian General Standards Board (CGSB) no longer supports paint specifications. This does not coincide with what's happening in the real world where standards setting organizations for paints and coatings continue to be recognized and used widely. Paint and coatings manufacturers work closely with standard setting organizations as they see them as another level of accreditation for the many lines of products, especially those used in institutional and industrial settings. These include the American Society of Testing and Materials (ASTM), Master Painters Institute (MPI) and the Society for Protective Coatings (SSPC).

> "To the establishment of quality standards and quality assurance programs, training, and publications for the architectural paint and coatings sector in the USA and Canada."

Critical Standards for Paint and Coatings

ASTM oversees an impressive 12,000 standards used around the world to improve product quality, enhance safety, facilitate market access and trade, and build consumer confidence. ASTM's paint and coatings standards are "instrumental in specifying and evaluating both the physical and chemical properties of coatings applied to bulk materials to improve surface properties. They also produce guides for appropriate application methods for coatings including enamels, varnishes and electroplating, pigments and solvents." ASTM's leadership in international standards development is obvious and is driven by the contributions of its members of more than 30,000 of the world's top technical experts and business professionals representing 150 countries. ASTM is clearly on the leading edge. "Working in an open and transparent process and using ASTM's advanced electronic infrastructure, ASTM members deliver the test methods, specifications, guides, and practices that support industries and governments around the world."

Equally impressive in developing standards is Vancouver based Master Painters Institute (MPI), an organization dedicated: "To the establishment of quality standards and quality assurance programs, training, and publications for the architectural paint and coatings sector in the USA and Canada." MPI performance-based paint and paint application specifications are used by a number of organizations in Canada and the United States such as: the US Military; the U.S. General Services Administration (GSA) as the replacement for US Federal Paint Specifications; the AIA MasterSpec, referenced by a significant number of the architects in the US; NASA for facility maintenance; hospitals run by the US Veterans Administration; the Canadian Government's National Master Specification; the U.S. Navy and thousands of other North American designers and facility managers. The test methods used by MPI are published and are either ASTM approved, or approved by major users such as the paint experts at Navy Facilities, Army Corps of Engineers, GSA, etc. MPI issues an 'Approved Products List' that is published twice a year in booklet form and updated regularly. In addition to the new High Performance Architectural categories, there is also information on Low Odor/Low VOC categories being developed. The MPI 'Approved Products List' functions like other Qualified Product Lists (QPL) and is used by hundreds of architects, specification writers, building owners, property managers, condo councils, and government agencies.

Canadian paint and coatings manufacturers believe, like many of the organizations noted above, that performance and durability are critical to true sustainability. Premature failure and frequent repainting inevitably leads to greater VOC emissions and non-sustainable and costly maintenance for the customer, whether it is DIY job or a commercial undertaking. While meeting stringent VOC regulations for architectural and auto refinish coatings promulgated in 2009, the industry has once again stepped up to the plate and challenged the notion that VOC levels alone should be the sole determinant of a 'green' coating. The industry has gone beyond that level and through the various standard setting organizations have worked to deliver products that meet higher health, safety and environmental standards, while producing products that get the job done.

Gary LeRoux is the President of the Canadian Paint and Coatings Association with headquarters in Ottawa, ON.

Solvent Recycling:
Good for Business and the Environment

By Gary LeRoux

The solvent recycling business has been rapidly expanding in recent years, and it has become one of the preferred means of conserving natural resources. The solvents from discarded paints, or from paint equipment cleaning, help minimize their eventual contribution as hazardous waste materials thereby eliminating the need for landfill disposal. Landfill areas are becoming increasingly scarce and consumers are demanding that companies mitigate their environmental impacts as much as possible. It has, therefore, become a necessary process to minimize the industrial waste at the source wherever possible. This is helped by the fact that such a practice can also reduce the cost of doing business.

The paint and coatings industry in Canada now has an official post-consumer paint-recycling program established in every Province and solvent-based paint products are included in those programs. For industrial products and solvents like thinners and reducers, there are solvent recycling businesses growing across the country. Most of the time they operate independently with no formal organization or program to oversee their activities or optimize the management of the products or solvents after ICI (Industrial, Commercial and Institutional) collection.

A solvent is essentially a material used to dissolve or dilute another substance. There are many examples of solvent uses including degreasing, cleaning and fabric scouring, diluting, reducing, extracting, and inducing reaction in synthesis media. A spent solvent is defined as, "Any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing." In other words, a spent solvent is a solvent that has been used at least once and cannot be used again for its original purpose without being processed, due to contamination during use. Such a material is considered solid waste and is considered hazardous. The paint and coatings industry accepts has had to deal with this fact as part of their business, while and governments have made it an integral part of their municipal and special waste regulations. That said, solvent recycling does require effort as well as specialized technology.

Solvent recycling is the process of taking used, dirty solvents and cleaning them until the solvent is returned to its pure form or to any acceptable specification. Used solvents are placed in a solvent recycler and "put through a process that fractionates and distills them from the chemicals that made them dirty — those introduced to create a reaction with the solvent." Aside from the positive environmental impact from solvent recycling, a key benefit is cost reduction. Companies don't need to buy the same amount of solvent, because it can be recycled, and disposal fees are greatly reduced with less of the dirty solvent discarded. This can be true for any segment of industry that uses solvents, including laboratories, auto body shops, paint shops and paint contractors.

There is a distinct difference between "recovered" and "recycled" solvent no matter which product you are considering. Solventborne (SB) products that are in high demand for commercial infrastructure projects still dominate the industrial paint industry. While it is true that 90 percent of solvent 'wastes' are 'recovered' during paint production, the level of recycling for solvents at paint plants is lower depending on several factors: the grade of solvent used, nature of the production and the level of contamination. A majority of industrial paint manufacturers have purchased their own solvent recycling equipment for internal use and can reuse solvents as many times as needed. Companies recovering solvents that do not have internal recycling systems send the solvents to outside companies for transfer, treatment or elimination. A number of solvents can be recycled and even resold by solvent recyclers such as acetone and varsol.

For architectural latex plants, the market is largely dominated by waterborne products with less than 5% in volume of sales being solventborne. For waterborne paint plants, the solvent is water and some recycling occurs with 'washing waters' that have been used several times. At the end of their cycle these used waters are then transferred to other chemical companies with expertise in treatment or elimination.

For the few architectural solventborne paint products that remain on the market in Canada, they are all recovered at their end of life under the provincial post-consumer paint recycling programs. A fraction of the solventborne leftover paint collected is resold as recycled paint in Canada or exported. Regulations dictate that these products cannot be sold in Canada after 2014. Another portion is used in other value-added applications such as cement and asphalt production. Quebec based post-consumer paint recycler, Eco-peinture, maintains that some of the solventborne recycled paint cannot be easily re-sold (eg. unpopular rose paint often obtained from mixing whites and reds and other colors). It is also more difficult to add value to solventborne paint mixtures than waste solvent alone. Solventborne paint cannot be as easily resold into the marketplace, as is the case for latex paint and new market opportunities have to be sought for the product.

Industrial solventborne paint products are often made to respond to specific requirements while architectural leftover SB paints are not. Another post-consumer paint recycler, BC-based Product Care, also seeks out other applications for the recovered solvent borne stocks. The recycled solventborne mixtures may find other industrial applications in the future, other than solvent purifying to a certain calorific level suitable for the production of cement or asphalt. However, this varies by region across Canada as not all regions have the requisite facilities to accept and process solvent based stocks. The various provincial jurisdictions across Canada have their own unique regulations for post-consumer paint recycling. For example, in Quebec the paint manufacturer, Laurentide, has a limited time period to sell recycled solventborne paint on the open market.

Generally, the solvents from left over

paint stocks have several markets: 1) export markets with a high demand for alternative uses for solvents; 2) local markets for commercial and industrial use; and 3) companies specialized in adding value using recycled products to meet specifications for use in functions like cement making facilities. In contrast with the waterborne paint market, the solventborne paint market opportunities are still extremely limited.

For architectural WB and SB paint recycling in Canada, the recovery rate - in terms of tonnage - generally is as follows: about 25 per cent is metal/plastic containers while 60% is recovered paint (latex and solvents) and the rest 15 per cent is paint residues that is considered scrap. It should be noted that 11 20 per cent of the recovered paint quantities (15 percent of the 75 per cent recovered paint quantities altogether) comes from the bottom vat residues where recovered paint is mixed and cannot be reused and no value can be extracted from this quantity. The settled matter at the bottom of the recipient containers has to be recovered and eliminated. Solventborne paint recovery from waste diversion programs are diverted for approximately 3.5 percent of the total quantity recovered from provincial programs.

Overall, this information demonstrates that paint manufacturing companies - and product users - have recognized the benefits from paint recovery programs and solvent recycling systems. A key business benefit is the cost-savings related to an expensive natural resource supply.

Aside from the obvious environmental benefits the advantages of solvent recovery and recycling are real. A recent pilot project using solvent recycling systems revealed the following benefits:

- Decreased cost for disposal (after two year payback)
- Decreased lab waste stream volume
- Decreased operations and scheduling problems
- Decreased accumulation & storage constraints (main accumulation area serviced less frequently)
- Recycling opportunity (waste recycled and savings on less frequent purchase of new product)

European based Veolia Environment recently confirmed the above results when it issued a statement noting that it expects revenue from its toxic waste recycling business to grow by 10 percent per year over the next four to five years and profit from these activities to grow by 15 percent per year. For 2012 it reported $1.04 billion in revenue from its recycling business. It went on to say that it would continue investing in plants to treat industrial solvents and old batteries because the margins on toxic waste recycling are significantly higher than at Veolia's other businesses. It is a clear case of an alignment between economic and environmental sustainability.

The bottom line is it makes sense to reuse expensive solvents as much as possible during the paint manufacturing process and to encourage recovery of solventborne products at the end of life by clients. However, the process of recovering and recycling solvents can be challenging. If not done properly the recovered solvents will not reach the desired level of decontamination for further use. For proper use these recycling processes require specialized equipment, proper maintenance, periodic cleaning, specialized labour, etc. Nevertheless, the return on investment for manufacturers and other users from a sustainability standpoint can be huge. Solvent recovery and recycling can produce a triple benefit: environmental, economic and social.

Gary LeRoux is the President of the Canadian Paint and Coatings Association with headquarters in Ottawa, ON.

Solvent Recovery Systems

Solvent Recovery companies have been in existence for several years. Now with government regulations insisting on a clean environment, these companies offers several options to the industrial finisher, when it comes to recycling their solvents.

Usually a company will offer several options such as: Solvent Recovery Systems, Solvent Recycling Systems and Solvent Distillation Systems:

Recycling waste solvent allows operations to:

Save money and get an excellent return on investment

Obtain higher quality solvents

Reduce liability related to solvent storage, transportation and disposal

Helps save natural resources (oil)

Comply with government and certification guidelines for waste reduction

Energy efficient systems exist in the industry offering up to 35 per cent less energy usage.

Cost Savings

Cost savings occur through major reductions in solvent purchases, reduced waste solvent disposal costs and lower storage costs for both fresh solvents and waste solvents.

Waste solvent recycling will increase your team's productivity:

Recycling solvents will allow your workers to use more solvents to get the "job done faster". Since you can recycle your solvents, the solvent becomes almost free.

Reusing recycled solvent means you may reduce the amount of federal, state, and local Toxic Release Inventory (TRI) and Department of Environmental Quality (DEQ) reporting you must provide, allowing employees to use their time more efficiently.

Available in different sizes and capacities to meet the needs of all volumes of waste solvents, company's carry Solvent Recycling Systems, Solvent Recovery Systems and Solvent Distillation Systems that can be customized for full automation. Additional features, such as, automatic feed and discharge of the solvents and sludge means the system can be filled and almost forgotten. Some lines can operate unattended 24/7. Equipment can also be designed to process Nitrocellulose contaminated waste. Some equipment has an automatic scraper system, which keeps the inside of the vessel clean, as well as, helping to remove the left-over sludge.

The manufacturer or distributor will help the Finisher determine which solvent recyclers best meet their waste management requirements in the most cost effective manner.

Some manufacturers offer analysis calculators on their web sites to see how quickly one of their solvent recovery systems can pay for itself.

Recycling and Recovery

Solvent recycling and recovery programs are designed to help your facility accomplish two major goals – reducing liquid waste disposal expenses and recycling of your liquid solvent waste such as solvent waste, alcohol waste, blanket wash and liquid cleaning solvents – providing positive environmental and economic benefits. Solvent recovery equipment can be a costly investment, but solvent recycling programs can help. Companies will pick up your waste solvents and bring it to their liquid recycling facilities. The solvent is tested, segregated from other companys' solvents and run as a batch through solvent distillation technology. The resulting recycled product will be of virgin quality and will be available to you for purchase at a rate lower than your current liquid virgin solvent purchase price.

With the price of solvent continuing to rise, programs as described, allow the elimination of costly increases by purchasing your own recycled solvent back. Waste disposal and solvent purchase expenses will be reduced from what you are currently paying.

Example for a typical company using a solvent called Blanket Wash:

- The solvent reclaimed from your used blanket wash or other waste cleaning solvents is indistinguishable from the virgin product.

Results include:

- Reduced waste disposal expenses
- Reduced blanket wash and solvent purchases
- Lowered generator status

For a typical printer, one drum of virgin blanket wash used on the press results in about two drums of waste that can cost in excess of $300 to dispose of. By recycling that used blanket wash, you capture nearly all of the solvent to reuse with less than $20 of waste to ship. This results in a 95 per cent reduction of hauling and disposal costs with a lot less new blanket wash to purchase. Based upon our experience with over 250 installed Solvent Saver Systems, the equipment typically pays for itself in less than 18 months.

Equipment can use a multi-stage vacuum distillation process that separates blanket wash into its components at lower than normal evaporation temperatures. Any waste residues are self-contained within the units. Distilled water can be sent down the drain and the reclaimed solvent is ready to go back onto press with the addition of a recharge agent. These automated technologies need very little attention. Switching out drums and using touch-sensitive control screens is virtually all the labor required. The equipment often has a small footprint, requiring little expensive manufacturing space. The machines operate operates at low temperatures, making it safe for installation.

Waste solvent streams can be recycled efficiently and economically using solvent recyclers. No matter the solvent, from acetones to white spirits, contaminated solvents can be recycled to their original form. Many solvent recyclers have true 3 and 6 gallon capacities. Solvent recyclers usually do not use filters or any type of chemicals to achieve solvent purification. They are stand-alone units that function on the time proven concept of distillation, designed from years of experience to operate reliably and with ease of operation and maintenance.

Recycling Equipment can recycle up to 95 per cent of waste solvents and are able to operate in hazardous working areas if necessary, quietly and reliably.

Options available on recycling equipment include:

- Stainless steel condenser coils
- Vacuum distillation
- Condenser cooling (air, water)
- Water quenching
- High temperature
- Custom features

There is a broad range of recycling solutions in the market, with equipment addressing solvent recycling, oil recovery and industrial process water purification systems.

Transfer Efficiency and Consistency

Manufacturers of Automatic Liquid Paint Spray Guns discuss what customers are asking for and how they are stepping up to meet their needs.

ANEST IWATA USA, Inc. is the North American subsidiary of ANEST IWATA Corporation in Japan. The company produces spray equipment for every size and style of application purpose, from fluid handling to electrostatic equipment, flat line and robotic automatic equipment to hand spray gravity and pressure guns all the way down to airbrushes and marking guns for circuit boards.

They developed their patented "LV (Low Volume) Technology" to solve a long standing problem for most finishing professionals, better transfer efficiency. The main benefit of utilizing "LV Technology" include better appearance, better through dry and better transfer of the material to the surface. Solutions that do not escape the film before drying or curing cause many common paint defects. Our "LV Technology" pre-atomization theory minimizes these problems, because the in-flight loss of solution is greater than other technologies. Painters who have made the switch to "LV Technology" notice significant reductions in product consumption and better appearance. This technology is available in HVLP and compliant high transfer efficient spray equipment.

Jim Bunnell of **Can-Am Engineered Products**, Inc. says, "The main things we hear people ask for is transfer efficiency and good, consistent penetration into tough-to-reach areas."

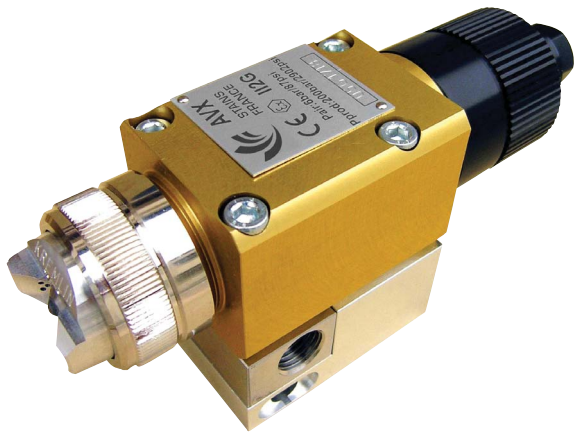
Can-Am's guns were rated by the South Coast Air Quality Management District at 90 per cent transfer efficiency in their lab tests. Also, their turbine-powered guns generally achieve much better penetration into awkward recesses and thus often can solve penetration problems a paint shop might be having with traditional compressed-air HVLP guns.

"Our #2100 Automatic Spray Gun is our most popular automatic gun," says Bunnell. It has an aluminum body with stainless steel fluid passageways for full compatibility with waterborne coatings and has Teflon packings. It is available in recirculating and non-recirculating paint supply versions. A full assortment of fluid tip sizes from 0.5mm-2.5mm are available as well as several different air caps to meet your spraying needs. Mounting brackets are available for most applications."

www.canamengineered.com
www.turboairdrying.com

S.T. Rajan, Vice President of **Exel North America**, Canadian Branch says customers are, "looking for easy to use charts with break downs so that the gun manufacturers are easy to work with. Ultimately, they are looking at the quality of atomization required for their process and the transfer efficiencies of the applicators. At the end of the day, the customer wants to apply the right amount of material with very minimal wastage."

Rajan says that Kremlin Rexson works very closely with machine builders, integrators and paint companies. "We have testing labs in Plymouth and Scarborough, ON, where we can simulate any situation using the customers coating to apply to any product." The lab in Plymouth has conveyors, ovens, reciprocators, pumps, two component mixing systems and experienced operators to test any product from our prospects or customers. When doing demonstrations we closely network with the paint company, integrators and system houses. Automatic spray guns could be electrostatic or non electrostatic depending on the substrates to be coated and the type of process selected. These automatic guns are modular in construction thus easy to mount or dismount during installation or maintenance. You could have recirculation of coatings through the gun depending on the type of application. The guns are designed with no dead zones which are hard to clean when changing colours and also leads to solvent and paint wastage."



EXEL North America, Inc., manufacturer of Kremlin Rexson AVX and ATX automatic spray guns created the Airmix technology in 1975. Arimix technology reduces paint consumption, reduces cost of ownership, increases productivity, improves working conditions and preserves the environment.

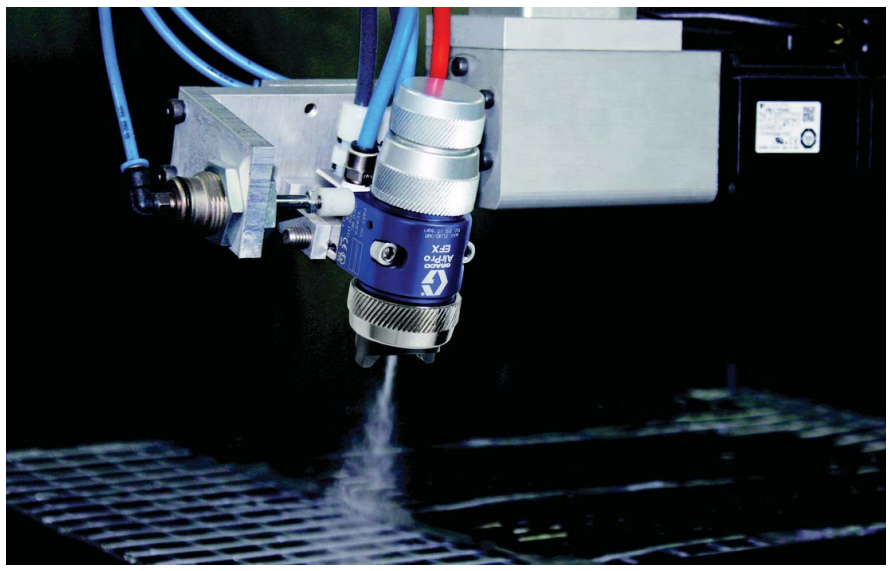
Airmix is efficient non-electrostatic spray technology providing up to 86 per cent transfer efficiencies. Most automatic machine manufacturers using medium fluid pressure atomization have purchased the Airmix automatic spray guns because they are reliable, deliver an outstanding finishing quality and their construction is simple and easy to maintain.

EXEL's Airspray, Airmix, and Airless spray guns deliver the following benefits:

- Very easy to Maintain.
- Very High Transfer Efficiencies
- Properly Designed Rebuild kits

- Easy Adjustments to flow air and fluids.
- Wide selection of tips, nozzles and air caps to suit different applications
- Size of the guns where they are fitted with very less room to play

EXEL customers have reported significant material savings, downtime costs reductions and increased finish consistency reducing the number of rejects.



Wendy Hartley, **Worldwide Product** Marketing Manager, Graco Inc. says, "Automatic gun customers are looking for high quality, precision spraying. The AirPro EFX gun is an air spray automatic gun with optimized performance for the most precise spray finish. The AirPro EFX air caps and nozzles are designed to deliver superior finish quality. There are five types of air cap technology so the end user can determine which technology delivers the highest quality finish with their material. In addition, each AirPro EFX gun comes with a serialized spray report. The report verifies spraying benchmarks are met or exceeded and includes an actual spray pattern from the gun. The serialized spray report gives the end user confidence their AirPro EFX gun will deliver outstanding finish quality."

Customers also want precision spraying to reduce their material usage and improve their transfer efficiency. The AirPro EFX has precision fluid flow adjustment with a micrometer-telescoping knob. The micrometer-telescoping knob, not only allows for small incremental changes in fluid flow, it is numerical indexing for retainable adjustment settings. The AirPro EFX gun allows the end user to precise, repeatable fluid flow for material savings."

Binks Spray Guns says their customers are asking for a spray gun that can spray a wide variety of coatings. "They want consistent particle size and distribution," she says. "Repeatability is a must. The spray guns must be robust and long lasting, and when maintenance is needed, it must be quick and easy. Customers want to reduce the cost of their operations. They can do this with an efficient gun that reduces labor, rework, material usage, and air consumption."

The Binks Model 21 is an automatic gun that will function with a wide variety of coatings including those with a high percentage of solids or abrasives, such a ceramics. Utilizing the new 21MD-2 air cap, very large patterns with consistent particle distribution can be obtained. The Model 21 is a robust spray gun with a body made of forged and plated brass. The brass body makes it the toughest automatic gun on the market. With a one piece forged body, triggering is quick, precise, and dependable, allowing this gun to perform under the most extreme conditions. A wide variety of air caps allows the user to find the perfect fit for their application.

Binks Model 21 Automatic is the heavy duty, pneumatically operated gun for spraying all conventional coatings. To accommodate harsh working environments, the traditional one piece forged brass body is back with new High Performance set ups. This gun has all the features, durability, and versatility that made the Binks Model 21 the industry standard on automatic finishing lines.

Quick and precise, the Binks Model 21 is controlled remotely with a three-way valve and is recommended for rotary, reciprocating and spindle machines.

Additional features include:

- Drop forged brass plated one piece body
- Adjustable stainless steel fluid needle
- Fan control at gun head (control and adjust spray patterns)
- Expanded setups for all materials
- Model 21V option is built for abrasive fluids with a tungsten fluid nozzle and needle

DeVilbiss Spray Guns says, "In most applications the finish quality is the foremost criteria. This is achieved in automatic installations through repeatability of spray pattern and fluid control. With space as a premium in many of the automatic gun movers and robots, size and weight are a major factor."

The Compact Trans-Tech X is a lightweight applicator that answers the needs of both Automotive and General Industry. The breakaway design allows the gun to be easily serviced on line without major disruption to the flow of production. The Trans-Tech technology imparts superior spray finish and is capable of repeatability with a guaranteed frequency.

DeVilbiss Compact Automatic X is small in size but big in features. Highly sophisticated in application technology and product design, this automatic gun detaches from its mounting block in seconds via the easy thumb release mechanism — no tools needed. Rapid-detach feature from DeVilbiss dramatically reduces production downtime; makes maintenance easier and servicing faster. Additional features include:

- Recirculating and non-recirculating gun head (all in one)
- Fixed gun positioning
- Small foot print
- Wide range of air caps (Trans-Tech and HVLP)
- Removable stainless steel spray head
- Fluid adjusting knob with 18 indexing positions (precision control of spray/fluid flow)
- Stainless steel passages (waterborne/solvent based materials)
- Independent fan, atomizing and triggering air
- Indexing air cap (consistent reproduction of spray pattern)

Nordson Corporation, a recognized leader in liquid dispensing technology, introduces new Trilogy Non-Electrostatic Spray Guns for liquid applications. The new gun line encompasses air assist airless, air spray and low volume/low pressure technologies. Incorporating the latest in design technology, Trilogy non-electrostatic guns provide excellent spray quality, the durability to withstand harsh manufacturing environments and ease of handling and maintenance.

Designed for complete application versatility, Trilogy non-electrostatic guns are

also available in manual and automatic configurations, along with gravity-feed and pressure-feed versions. With more than 14 non-electrostatic gun options now available, complementing Nordson's existing Trilogy electrostatic line, the company can provide manufacturers with the widest range of spraying solutions.

The complete Trilogy non-electrostatic gun line includes:

- Trilogy Air Assisted Airless (AAA) Manual
- Trilogy Air Spray (AS) and Low Volume, Low Pressure (LVLP) Manual
- Trilogy Air Assisted Airless (AAA) Automatic
- Trilogy General Purpose (GP) Manual
- Trilogy Automotive Coating (AC) Manual
- Trilogy Air Assisted Airless (AAA)-LT Manual
- Trilogy Air Spray (AS), Low Volume, Low Pressure (LP) and Quick Change (QC) Automatic

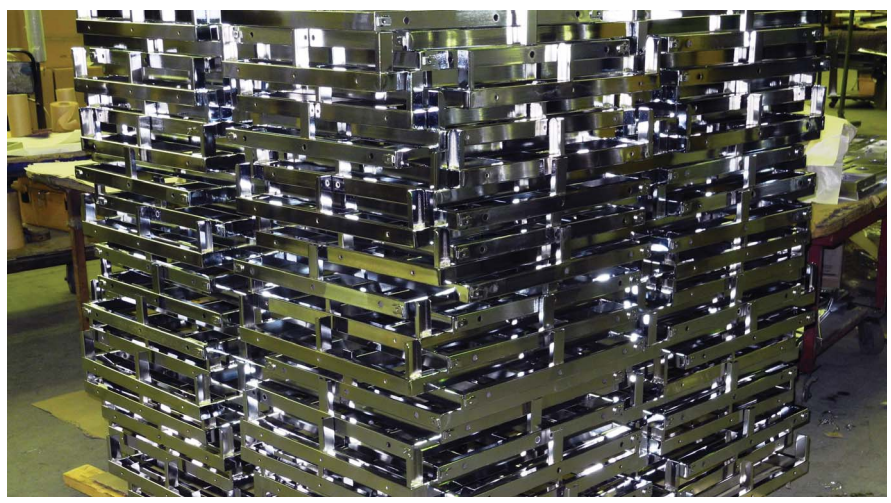
"The new line complements Nordson's existing portfolio of airless equipment, rotary atomizers, electrostatic spray guns, voltage blocking systems and nozzles, rounding-out a complete line of products for most any liquid coating need," explains Brad Syrowski, global liquid business development manager, Nordson Liquid Systems. "It is part of an overall investment that represents Nordson's largest liquid product line expansion to date, including Trilogy non-electrostatic guns, StediFlo pumps and OptiMix plural component metering systems. The expansion demonstrates Nordson's commitment to the long-term growth of its liquid coatings business."

Nordson Corporation is one of the world's leading producers of precision dispensing equipment that applies adhesives, sealants, liquid and powder coatings and other materials to a broad range of consumer and industrial products during manufacturing operations. www.nordson.com

Jorge Flores Marketing Coordinator of **Walther Pilot North America** says, "There are a number of very specific qualities that have lead our customers to WALTHER PILOT products. The top quality build of our automatic spray guns is the main attribute that keeps our customers extremely satisfied." Flores says, "With many companies running three shifts, durability is now a primary requirement as less repair time equates to direct monetary savings. This is the area in which our products stand out. With properly matched needle & nozzle sizes, customers reporting run cycles of several months between repairs is not uncommon; all while running continually for three shifts. The high build quality also leads to easier and more efficient operation, two other main attributes for which our customers are continually looking. Less overspray, better transfer efficiency, and more even and controllable spray patterns have been reported by many of our customers. Companies want to save time and money, and the high quality build of our products allow them to do so."

The PILOT WA 700 is Walther Pilot's most fully featured and versatile spray gun. Its stainless steel front body and wetted parts allow successful spraying of virtually any material. Its extremely robust German design and build allows exceptional performance with very little downtime due to repairs. It is available in Conventional, HVLP, HVLPPlus (up to 88 per cent transfer efficiency), AR (Abrasive Resistant), and Adhesive (solvent or water based) versions. The option of internal or external control for fan and atomizing air, also ensures that, no matter how the system is setup, there is a version of the WA 700 available to easily tackle the job. Various nozzle sizes and extensions are also available.

Manufacturers of automatic liquid paint spray guns are listening to the needs of Finishers and providing products that answer their needs.



continued from front cover

nickel-plating baths used today in industry, the amounts and their ratios have varied significantly, so that a more precise name for such baths is "Watts-type."

The combination of nickel salts allows for a variety of characteristics. Nickel sulfate provides the principal source of nickel ions. The concentration of nickel ions largely determines the maximum current density that can be used. Nickel chloride enables the anodes to corrode without polarization and improves the electrical conductivity of the plating solution. Boric acid buffers the hydrogen ion concentration (pH) in the cathode film and improves the brightness and ductility of the deposit.

These baths yielded soft, ductile deposits that were easily buffed to an appealing bright finish. But to achieve the lusterer demanded by a discriminating buyer, the object being coated had to be polished and the coating buffed. Both were costly. With the development of automatic polishing and buffing, costs were reduced, but this was not enough. Hence, the simple Watts-type baths were used for non-decorative, or functional, plating only.

Bright Nickel

Even before Watts published his work, the possibility of producing bright coatings, without polishing and buffing, tantalized researchers. The first practical bright nickel bath was developed by Max Schloetter in the early 1930's. Having successfully used aromatic sulfonates in other plating processes, he decided to try them in a nickel bath. Significant research continued into 1940 with various patents being filed.

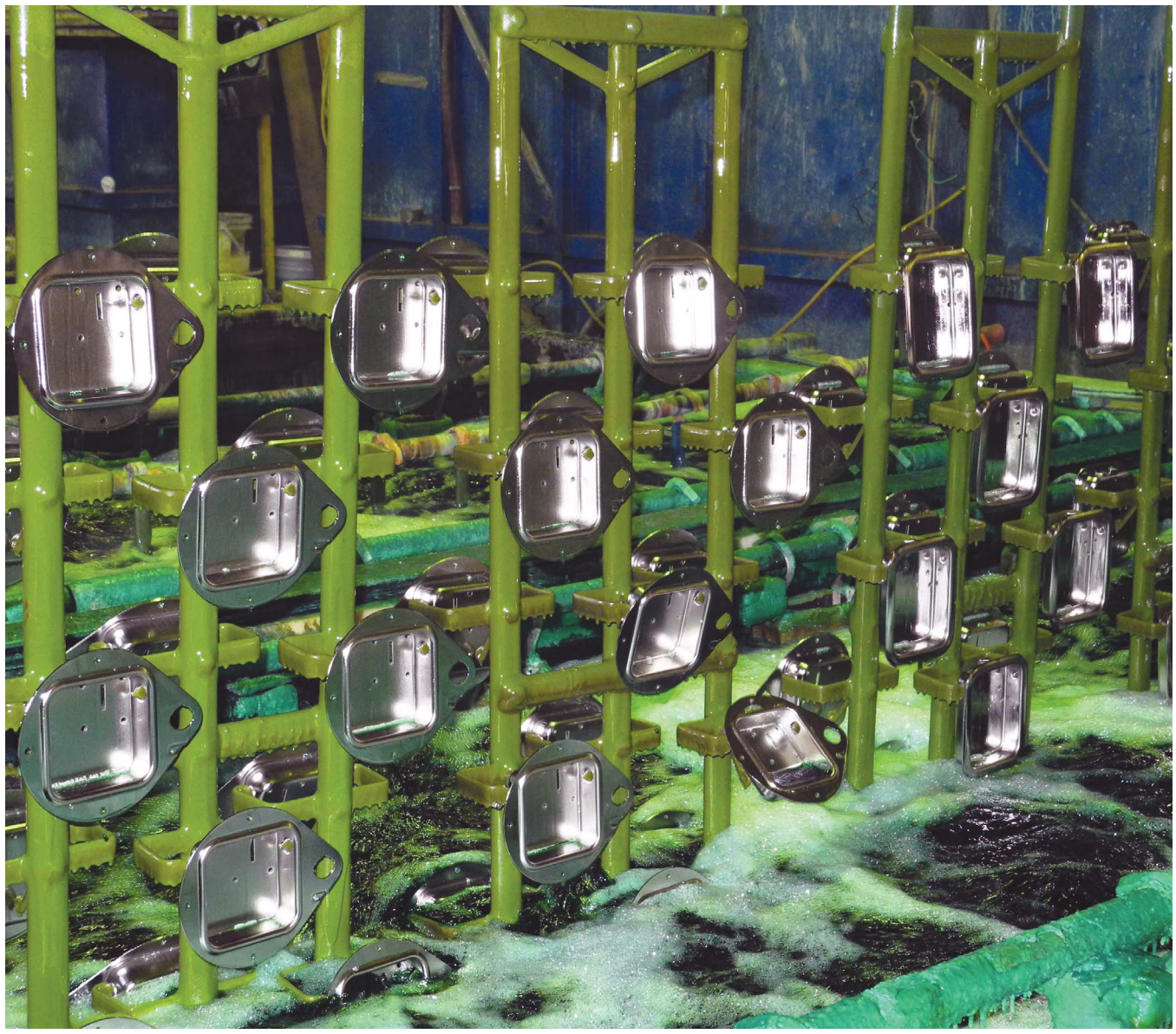
Although real progress had been made, there were still problems. They included pitting, failure of thick deposits to be fully bright, and high internal stress. Tendency for deposits to pit was a common fault, but one that proved easy to correct through the use of anti-pitting compounds. An effective one was sodium lauryl sulfate, the use of which was patented in 1941. Deposits from baths using Schloetter-type compounds were also highly stressed and therefore easily cracked. There was also a problem with brightness as the rate of brightening tended to decrease with increasing thickness.

Fortunately, the advantages of bright nickel processes impelled researchers to spend money and effort to overcome the deficiencies. Their work uncovered other effective brighteners that were compatible with the Schloetter-type compounds, but confusion followed their discovery. Some called the Schloetter-type "secondary brighteners" and the newly discovered, more powerful compounds "primary brighteners." Others used a different nomenclature. Their importance, though, lay not in what they were called but in what they did to the nickel deposit. Together with suitable wetting agents to control pitting and other additives to reduce stress, they made nickel plating an outstanding industrial development of the period.

Trends

As a result of government legislation in the early 1970's to conserve energy and to limit the damage to automobile bumpers resulting from low-speed collisions, trends favouring greater use of urethane and other low-density materials were at the expense of nickel/chrome plated steel bumpers.

The elimination of decorative nickel/chrome bumpers and trim from almost all except expensive automobiles had affected the nickel plating industry. The increase in popularity of light trucks and other vehicles retained bright-work along with decorative styled wheel rims made of either aluminum or steel helped to allow independent bumper producers and platers in North America to remain successful and profitable.



“Electrodeposited nickel coatings impart corrosion protection, thereby conserving natural resources, while improving the performance and appearance of many industrial and consumer goods.”

The non-automotive applications of nickel plating grew. Decorative non-automotive end uses of nickel plating included: furniture components, building hardware, hand tools, wheel goods, major appliances, plumbing/lighting fixtures, housewares, luggage hardware, wire goods and other articles. These applications for bright nickel relied on the nickel for a decorative appearance with corrosion resistance.

Restrictions

The European Union (EU) Directive 2004/96/EC was issued on September 27, 2004 to restrict the use of nickel in consumer products that may have contact with skin such as buttons, fashion jewelry, sunglasses, tighteners, zippers, rivets, belt buckles and cell phones. Nickel release was then added to the REACH (Registration, Evaluation, Authorization and Restriction of Chemical substances) Annex XVII-REACH Restriction List, further hurting the nickel plating industry.

Requirements of REACH Restriction on Nickel Release Products Limits

Any post assemblies which are inserted into pierced ears and other pierced parts of the human body 0.2 g/cm2/week (migration) Articles intended to come into direct and prolonged contact with the skin 0.5 g/cm2/week

Today

Organic brighteners are utilized in order to obtain uniform, bright deposits. These are typically organic compounds that modify the nickel deposit to achieve a desired appearance. Brighteners for bright nickel typically include primary brighteners, which provide a high degree of lustreluster, secondary brighteners which add sulfur to the deposit, provide ductility and a uniform grain structure. As well, auxiliary secondary brighteners are used to increase the rate of brightening and leveling. When these brighteners are carefully selected, it is possible to obtain bright, level, ductile nickel deposits over a wide current density range. It is critical, though, that these organic compounds remain in balance and are therefore provided in proprietary packages. These packages are formulated to achieve the best combination of stability, brilliance, ductility and ease of use for various applications in today’s market.

Branko Lebar, President of Four Star Metal Finishing, Canada’s premier furniture and store fixture nickel plater, identified the closure of key automotive nickel platers in the Province as a potential growth opportunity. “We had two challenges, firstly, we needed to evaluate whether or not we could plate to automotive specifications with our current nickel process and secondly, demonstrate to the automotive market that Four Star Metal Finishing was capable of meeting automotive requirements”.

Historically, automotive nickel platers have used a nickel process that provided optimum adhesion, ductility and corrosion protection, while furniture and store fixture nickel platers used a nickel process that provided the highest degree of leveling and brightness.

Dynamix Inc. accepted the challenge of developing a bright nickel capable of achieving the design criteria demanded of an automotive nickel with a “bright is right” furniture nickel process. Mr. Lebar maintains, “The Dynaplate Ni L chemistry is what we had been waiting for, as it provided us with the ability to service a wider market with our nickel plating processes”. With the addition of a semi-bright nickel bath, Four Star was able to achieve the specified automotive requirements, while delivering extremely bright and leveled deposits without sacrificing ductility.

According to Mr. Lebar, “The future of the metal finishing industry in Canada is diversification”. The receding manufacturing sector is limiting the number of high volume plating contracts. In order for plating shops to grow or even maintain their present sales they must be able to satisfy their customer’s requests, even if it means adding additional processes. Metal finishers that have the ability to adapt to the changing market will survive.

Four Star Metal Finishing is not only a full service copper, brass, nickel and chrome plating facility, but also houses a fully automatic pre-treatment/powder coat line with the ability to provide custom finishes in both plating and painting.

Adjusting the composition of the plating solution, monitoring impurity levels, controlling pH, temperature and current density, measuring thickness, adjusting current distribution to obtain uniformly thick deposits, continuous monitoring and control of deposit stress and optimizing the concentrations of organic additives to control the electrochemical characteristics of individual nickel layers assist in controlling the quality of electrodeposited nickel coatings.

Tomorrow

Electrodeposited nickel coatings impart corrosion protection, thereby conserving natural resources, while improving the performance and appearance of many industrial and consumer goods.

Some of the challenges to the nickel plating industry involve diversification of processes to adapt to changes in the marketplace, while applying modern scientific knowledge to maintain the quality of the electrodeposited nickel coatings despite negative aspects of regulatory and economic trends.

Stewart Tymchuk is the Technical Director and co-owner of Dynamix Inc., Markham, ON.

Wastewater Management:

Meet Regulatory Requirements – Hire Professional Technologists-Operators

By John Seldon

From, "Flushed away: Protecting fish from the things we use everyday." GRAND Actions The Grand River watershed newsletter March-April 2013, "… recent findings in the Grand River have shown dramatic changes in fish near (wastewater – writer's note) treatment plants, including altered expression of sex genes, the development of eggs in the male tissues (intersex), changes in the ability to produce hormones and altered reproductive success."

Using water is common to most production processes, and contamination of that resource is an almost inevitable outcome. Governmental regulations address the need to protect our natural resources. In Gary LeRoux's excellent article, "The Canadian Regulatory Environment", in Canadian Finishing & Coatings Manufacturing Magazine's (CFCM) March/April 2013 edition, he states "Regulations are, in effect, a manifestation of a company's social license to operate." Cleaning water of its contaminants provides residual waste streams (sludges) that need final disposal, which can be expected to confine these compounds forever. Having a professional technologist operating your wastewater treatment system is key to optimizing your waste treatment process goals and meeting the regulations LeRoux outlines in his article.

This is especially true as new, very sophisticated concerns regarding protecting our environment are beginning to gain a much higher profile.

Sophisticated Wastes

Organic Microconstituents (MC): Organic microconstituents (MC) are here. A few years ago a long-standing colleague of mine, an expert in water and wastewater analytical techniques, commented that the "time-bomb" in wastewater/water treatment was the need to address the exotic contaminants found in today's wastewater streams , often at very low concentrations. The truth of the matter is that they have been here for some time. It is just that they are now beginning to be addressed in more depth as to their presence (or by-products of themselves), their concentration, and how they affect the ecosystems they are contaminating. This is the organic equivalent of historical concerns, regulations and treatments of heavy metals in wastewater streams.

Wastewater treatment produces two effluent discharge streams – the treated wastewater and the collected residue (sludge) from the treated effluent stream. The residue stream, like a plant's final effluent, needs to be acceptable for final disposal. A good example of this is the effort to better understand an appropriate disposal approach for municipal wastewater treatment plant (now being called Water Resource Recovery Facilities, WRRF) biosolids in order to best protect our citizens. Agricultural application, an historically favoured approach for biosolids disposal, is increasingly harder to justify due to concerns about their complex constituents. An industrial wastewater plant will typically deal with wastes specific to its production. This may narrow the types of MC's within its effluent streams, but the problems of appropriate, perpetual disposal remain the same, where these contaminants are found to be unacceptable for discharge to the natural environment.

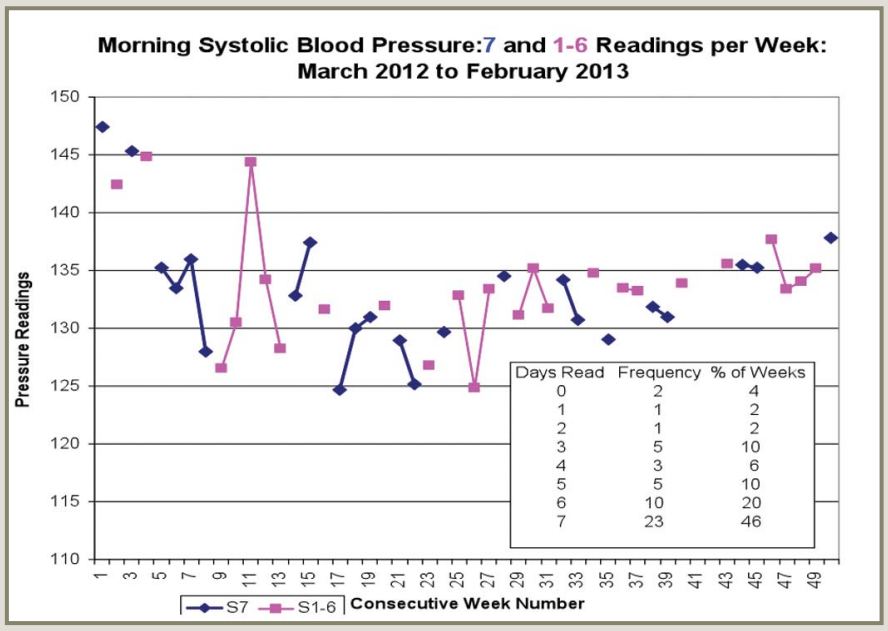
In a recent example of this, the writer was approached by an industrial client to help find a new disposal option for his sludge cake (i.e. the residue, mechanically dewatered, from his wastewater treatment system). This firm was looking for an alternative to their years' long use of a well-regulated landfill disposal site – a commonplace means of final disposal. Even this, perpetual storage in an engineered site, is no longer being considered acceptable by some firms. This is, in part, being driven by a corporate desire to leave no long term waste-based liability, perceived or real, that can be associated with the firm as well as its seeking a more environmentally responsible approach to residue handling.

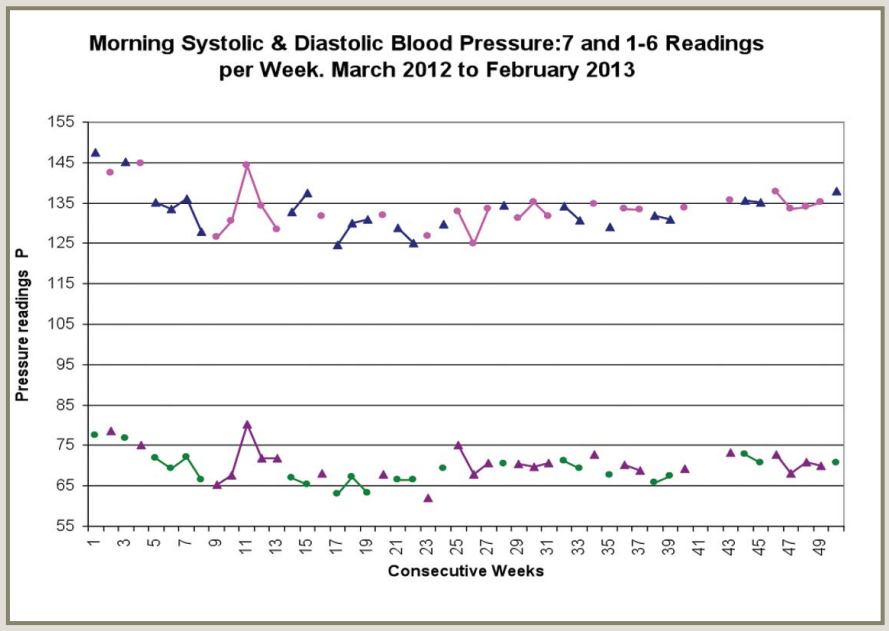
Indeed in Canadian Finishing & Coatings Manufacturing (CFCM Magazine's March/April 2013 edition), the Case Study highlighting "Gallant Bicycles – The Way you Like It" addresses this as well. When the firm was considering powder coating pretreatment it opted for "The Enviro-Prep system … because we wouldn't have

Average Daily Systolic BP Values by Calendar Week

5 number summary	All 1 to 7*	All 1 to 6**	All 7***
n	48	25	23
Q0	125	125	125
Q1	131	132	130
Q2 (Median)	133	133	133
Q3	135	135	135
Q4	147	145	147
Arithmetic Average	133	134	133

* All weekly average values regardless of numbers of days read per week.
**All weekly average values with between 1 & 6 readings per week.
*** All weekly average values where all 7 days were read each week.





to worry about waste-handling …" and also "Aqueous systems required multiple process tanks, heat source utilities, water utilities, drain/sewer utilities and daily monitoring and maintenance."

Tough Bugs: Organic MCs are not the only current area of investigation in wastewater treatment. Consider the "super bug" methicillin-resistent Staphylococcus aureus (MRSA), which can cause "…difficult-to-treat and potentially fatal bacterial infections in hospital patients …". (Attack of the 'super bug.' Water Environment and Technology (WE&T) February 2013.)

Also, they can now be found in some municipal WRRF effluents, posing a hazard to WRRF operators and the public at large. The writer is not aware of research into finding the super bug in industrial wastewaters. However, if now present in municipal systems, it may find its way into an industrial organic treatment setting.

Data Basics

Heavy metals, organic microconstituents, and super bugs are complex subjects studied by sophisticated, talented researchers. Essential to any investigation is the collection, summary and interpretation of relevant data.

Again, LeRoux writes, "There are enormous costs associated with the time and effort related to data collection for companies in all sectors including paints and coatings, plastics, fertilizers, oil and gas, cosmetics, etc. The costs to industry can be counted in the tens of millions of dollars."

Recently, it was reported in The London Free Press, that three Ontario water treatment plant operators were fined - with one sentenced to jail for 30 days – for failing "… to report, as required, and did provide false information." According to the same article, the chlorine levels in a rural water system were allowed to fall below requirements and log books were compromised with inaccurate information.

As we move to ever more sophisticated means of data collection and interpretation, we must not forget that memory can fail you. There is no substitute for accurately measuring and recording information. Failing to act appropriately on data alerting you to a potential hazard to human health is inexcusable. Deliberately falsifying data is simply wrong.

When operating a wastewater treatment system at considerable cost, in order to meet environmental and health-based regulatory requirements, get the data right whether on the most basic of contaminant parameters or the sophisticated newcomers.

Employ Professionals

A professional operator-technologist, well-educated in wastewater treatment, incorporates securing and recording correct data into his or her training and daily working life, cognizant of the real-world implications of the values themselves – including, most importantly, the public's health.

John Seldon is a Waste Water specialist, and has 40 years of "hands-on" wastewater treatment experience. Contact info: 519-240-2926, jdseldon@hotmail.com.

Average Daily Systolic BP Values by Calendar Week

5 number summary	All 1 to 7*	All 1 to 6**	All 7***
n	48	25	23
Q0	62	62	63
Q1	68	68	66
Q2 (Median)	70	71	69
Q3	72	73	71
Q4	80	80	78
Arithmetic Average	70	71	69

* All weekly average values regardless of numbers of days read per week.
**All weekly average values with between 1 & 6 readings per week.
*** All weekly average values where all 7 days were read each week.

Metal Plating on PLASTIC SUBSTRATES

FISCHERSCOPE X-Ray XDLM positioning.

The following is just a handful of plating on plastics technologies available to meet customers' needs.

Measuring Cr/Ni/Cu Coatings on Plastic Substrates

Bathroom fittings are commonly finished with decorative chromium plating. But what appears to be a solid metal shower head, for example, is often just a multi-layered metal coating on top of a plastic substrate. To guarantee that the shower head not only look pretty when delivered, but even after many years of usage, the thickness of each individual layer must be controlled to ensure quality.

The typical composition of such shower heads is a chrome/nickel/copper coating system on top of a plastic substrate material. The decorative chromium outer layer is usually only 0.5 m thick (or less) and the nickel layer about 5-10 m. If the copper layer is between 20-25 m, making the overall coating thickness no more than 30 m, non-destructive measurement using the x-ray fluorescence (XRF) method for a true coating thickness reading.

X-ray fluorescence instruments with a proportional counter tube are perfectly suited for this application method. Even with small measurement spots, sufficiently high count rates can be obtained due to the large detector area, ensuring good repeatable precision. Because of the large, easily accessible measurement chamber, the robust instruments of the FISCHERSCOPE X-RAY XDL family are well suited for large specimens with complex shapes. To maximize the precision of the results, proper positioning of the object is essential, for example by choosing an intrinsically horizontal area or correctly aligning the sample. To assist in this crucial step, FISCHERSCOPE X-RAY measurement systems are equipped with a laser pointer positioning aid and high-magnification camera optics. Using the video image generated by the WinFTM software, the exact focusing of the measurement spot can be achieved.

Table 1

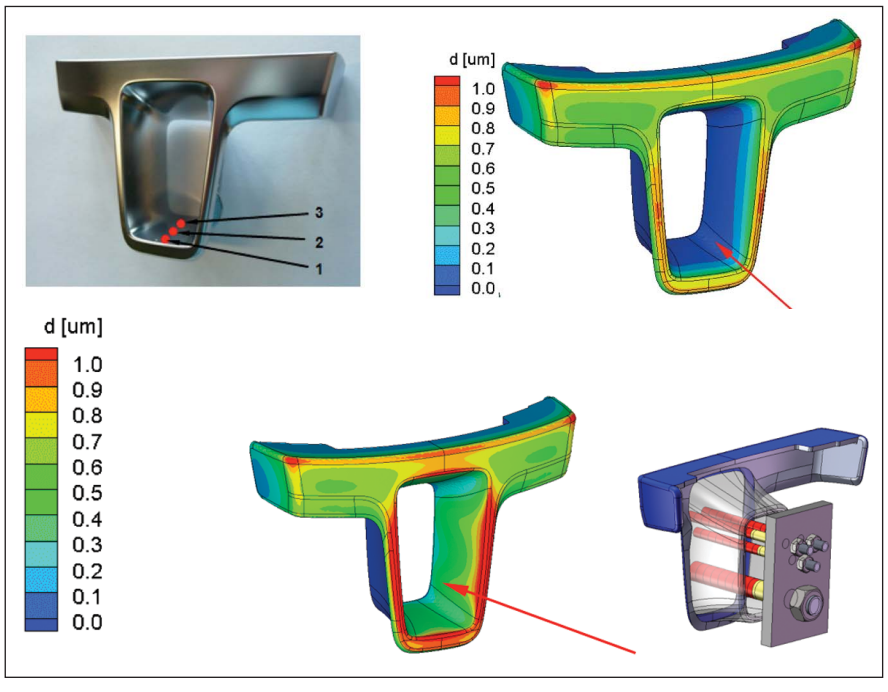
Measurement spot	1	2	3	4	5
Cr mean value	0.17	.017	.017	0.17	0.16
Standard Deviation	0.003	0.005	0.005	0.004	0.005
Ni mean value	7.24	7.40	7.10	7.29	7.21
Standard deviation	0.07	0.04	0.10	0.11	0.07
Cu mean value	21.40	21.90	22.10	20.10	20.60
Standard deviation	0.25	0.39	0.29	0.29	0.26

Typical results of an x-ray measurement, collected using a FISCHERSCOPE X-RAY XDLM with a measuring time of 30 seconds for four measurement cycles per spot.

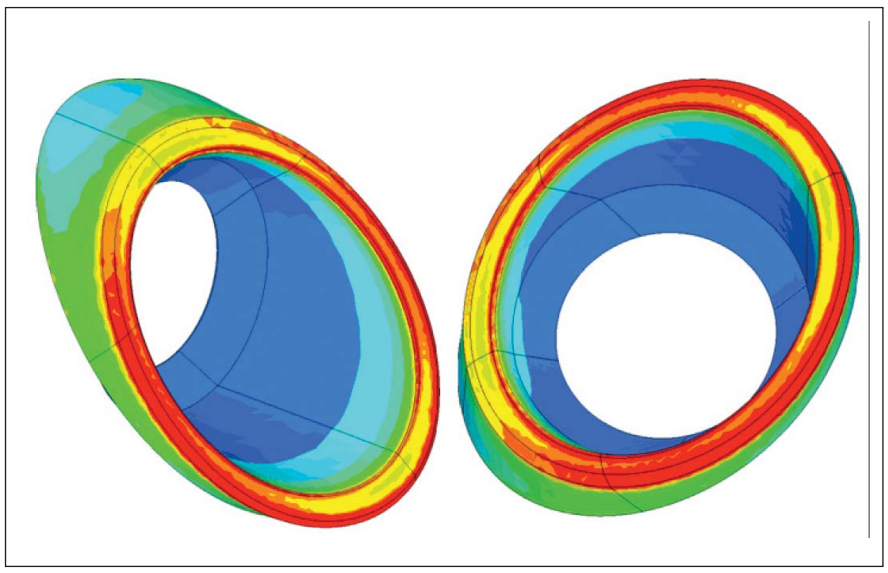
Upfront Plateability Assessment Reduces Production Risk

Just as Moldflow has become indispensable to the plastic injection molding industry, PlatingMaster simulations are becoming the norm for the plating on plastics (POP) industry. This move has been catalyzed by the US Automotive Industry's refocus on quality and manufacturing risk elimination. Without the need for any physical prototypes, it is possible for an OEM to input the math design data of a grille component, for example, and get an immediate view on areas that run a risk of being over plated (rough deposits, increased waste) or under plated (poor aesthetics an in-field corrosion risk).

The same technology can also be leveraged by plating service providers to design and optimize the rack, tooling and process, ensuring maximum yield within



Tests and simulations showed that the required chrome coverage would not be met.



Designer's upfront plateabilty analysis on the fog light bezel above, clearly shows problem with overplating on edges and no plating in the recesses – identifying this issue in the studio is much more effective, reducing total lead time and potential manufacturing cost overruns.

quality specifications.

Elsyca has available two products – PlatingMaster for detailed plating analysis and tooling design and also a 'lighter version' aimed at OEM studios for assessing impact of design on plating production. The company has a presentation available showing how TRW applied the predictive plating technology to redesign tooling and racking to ensure plating specifications were met in high volume production.

The following figures show that with appropriately designed auxiliary tooling, specifications would be achieved.

This technology is becoming firmly embraced by automotive OEMs, for example, GM's latest global standard for plated plastic parts, GMW14668, recommends "plating simulations where there is uncertainty of meeting minimum plating thicknesses due to part design features." For more difficult parts, such as License Plate Appliques (LPAs) there is, in fact, a requirement for plating analysis – 'Elsyca or equivalent approved'. Ford has also included plating simulation requirements in its Engineering Best Practices.

Product design determines success or failure. The challenge is to address the fine balance between aesthetics and the impact of design on manufacturing cost. Design characteristics, such as protruding edges or recessed areas, pose major challenges to the plating process. Elsyca's new Design Plateability Analysis tool will help the designer, by pin-pointing problem areas on the parts which will have problems with the layer thickness or quality of the deposit. The designer will be able to assess the impact of potential geometry changes on the plating process, while the product managers will be able to assess the impact of the design on the production cost.

NeoLink A Milestone in Direct Plating on Plastics

With Neolink, Atotech has reached a crucial milestone in direct plating on plastics. Much shorter and cost-effective than conventional plating systems for plastic materials, NeoLink ensures fast metal deposition on ABS and ABS/PC blends with no need for electroless Ni or Cu plating and Ni or Cu strike. Furthermore, the low palladium formulation (50 – 70 ppm) of NeoLink Activator allows for minimized drag-out costs.

Unlike conventional plating systems, usually removing tin and tin chloride after activation in the accelerator step in order to expose palladium, NeoLink replaces tin with copper. As a result, copper links to palladium, providing a high and stable electrical conductivity that allows for direct copper plating. Easily integrated in existing lines, NeoLink immediately

Cu/Ni/Cr plated parts after NeoLink pretreatment.

improves productivity and the reliability of the production.

NeoLink meets the most demanding requirements of the automotive, sanitary, fashion and white goods industries worldwide.

With annual sales of €965 million, Atotech is one of the world's leading manufacturers of processes and equipment for the printed circuit board, IC-substrate and semiconductor industries (Electronics), as well as the decorative and functional surface finishing industries (General Metal Finishing).

For determining the thickness of decorative Cr/Ni/Cu platings on plastic substrates with a maximum overall coating thickness of approximately 30 m, this article has provided a solution. To measure thicker coatings, instruments employing the (destructive) coulometric method are also available as an alternative.

Technology for creating simulations of the plating process before it is applied is becoming very cost effective for the plating on plastics industry.

For direct plating on plastics, research and development is ongoing for quicker, cost effective solutions.

Editor's note: Companies mentioned in this article can be reached at:
www.atotech.com
www.elsyca.com
www.fischer-technology.com

NASF Sur/Fin 2013
Exhibit Space Sold Out

The National Association for Surface Finishing (NASF) SUR/FIN Manufacturing & Technology Tradeshow & Conference has exceeded exhibit goals for its 2013 event and is now officially sold out for the third consecutive year.

SUR/FIN will take place June 10-12, 2013, at the Donald E. Stephens Convention Center in Rosemont, Illinois. Featured keynote speakers include Bill Blass, Director of Product Validation and Global Technology for Caterpillar and Ken Mayland, President, ClearView Economics.

NASF's SUR/FIN's educational and networking conference is a one-stop shop for over 70 compelling speaker presentations on a wide array of topics including:

- Chemical Milling
- Electroless Processes & Electronics
- Global Manufacturing
- Electrolytic Processes
- Light Materials Finishing
- Late-Breaking Regulatory Issues
- Metal Flake Technology
- Aerospace Finishing Applications

Conference organizers are currently making every effort to expand the show floor.

According to NASF's Board President, Rick Delawder of SWD, Inc. "This is a very encouraging sign for NASF and the finishing industry as we continue to grow in membership and activities through 2013. All of our programs are experiencing increased attendance."

Delawder adds, "The interest from exhibitors in being at SUR/FIN continues to grow, so we're very pleased exhibit space continues to be strong."

Now in its 95th year, SUR/FIN has been the trusted resource for what's next in surface finishing. Not only is there access to hundreds of suppliers and new products and technologies, but SUR/FIN boasts dozens of must-see features like the innovation updates, in-depth presentations, special product focus features, live demonstrations, and networking opportunities.

Show Schedule

Monday, June 10

4:50 PM – 5:00 PM	Show Opening
5:00 PM – 6:30 PM	Exhibits Open

Tuesday, June 11

8:00 AM – 9:00 AM	Keynote Speaker
9:00 AM – 5:00 PM	Exhibits Open
9:30 AM – 12:30 PM	Conference Sessions
12:00 PM – 2:00 PM	Lunch on the Show Floor
2:30 PM – 5:30 PM	Conference Sessions

Wednesday, June 12

9:00 AM – 3:00 PM	Exhibits Open
9:30 AM – 12:30 PM	Conference Sessions
12:00 PM – 2:00 PM	Lunch on the Show Floor
2:30 PM – 6:00 PM	Conference Sessions

Exhibitor List (as of April 26, 2013)

A Brite Company	829
Accu-Labs Inc	106
ACM Technologies	1017
Agmet LLC	823
AlumiPlate, Inc	1001
American Plating Power LLC	711
AMETEK Fluoropolymer Products	806
Andritz, Inc	700
Anode Products	222
Applied Thermal Technologies, Inc/ Hydro Miser	224
Asahi/America, Inc	136
ASC Process Systems, Inc	926
Asterion LLC	609
Assocated Rack Corporation	725
Assured Testing Services	233
Atotech USA Inc	601
Atum Environmental Services	123
Aucos Elektronische Geraete	911
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Calendar of Industry Events, 2013

June 10-12, 2013: SURFIN, Stephens Convention Center, Rosemont, IL.
www.nasfsurfin.com

June 26, 2013: OPCA GOLF CLASSIC 2013, Angus Glen Golf Club, 10080 Kennedy Road, Markham, ON, L6C 1N9.
www.opcatrusted.ca

September 30-October 3, 2013: Canadian Manufacturing Technology Show (CMTS) 2013, The International Centre, 6900 Airport Road, Mississauga, ON. *www.cmts.ca*

October 8-10, 2013: Powder Coating 2013, America's Center, St. Louis, MO. *www.powdercoating.org*

October 20-22, 2013: CPCA Conference 100th Anniversary, Chateau Laurier, Ottawa, ON.
www.cdnpaint.org

October 24-26, 2013: WMS Woodworking Machinery & Supply Expo (WMS) International Centre, Toronto, ON.
www.WoodworkingExpo.ca

November 18-21, 2013: Finishing Technologies at Fabtech McCormick Place, Chicago IL.
www.fabtechexpo.com

New Innovations in Spray Booths

Global Finishing Solutions' (GFS) Open Face Spray Booths feature a modular panel design. This approach offers the economy of a standardized line of spray booths while making available virtually unlimited sizes and configurations to fit a broad range of finishing processes. GFS Open Face Spray Booths are available in virtually unlimited widths and depths Custom, and optional white pre-coated panels are available. Our Industrial Open Face Spray Booths comply with the requirements of the National Fire Protection Association (NFPA-33), the uniform Fire Code (U.F.C. 45) and International Fire Code.

GFS provides a comprehensive line of spray booth products and systems for its global base of general industry and manufacturing customers. All GFS products are designed with one common goal: the ability to produce a superior quality finish in the most efficient manner.

Their Spray Booths feature a modular design. This approach offers the economy of a standardized line of spray booths while providing a variety of sizes and configurations to fit a broad range of finishing processes. Custom designs are available and may include white pre-coated panels.

DuroAir Technologies Inc. has developed, and successfully independently tested, the world's first known portable air containment and filtration technology that fully filters and recycles industrial contaminated indoor air and returns it safely to the indoor air environment.

This has significant environmental and cost saving implications for several industries including automotive and industrial coatings of new and refurbished equipment; clean rooms; swine and poultry barns; and many applications in aerospace, military, pharmaceutical and food preparation industries.

When combined with a new array of retractable or fixed shelters or booths, DuroAir can provide almost any customer that has an Indoor Air Quality (IAQ) issue, a cost effective, and environmentally beneficial solution.

"From its modest beginning within the aerospace industry, we have been working on developing and perfecting this technology," says DuroAir CEO Robert Leadley. "By combining our airflow shelter systems with our new air recycling technology, we can solve just about any IAQ issue that industry can throw at us - and we can do it fast and economically."

Providing Solutions

Almost all businesses that require any sort of coating to be applied to their products including paint, powder coating or other application that involves spraying has two problems: (1) keeping the area of work contained so that it does not get contaminated with dust or other particulates; and, (2) dealing with the air after it has been contaminated. Current solutions usually involve expensive fixed rooms that require the outdoor exhausting of high volumes of air, which in turn must be treated and filtered to meet stringent environmental standards. These fixed enclosures require significant space that permanently reduces square footage available for other processes and limits the size and shape of objects that can be moved into the booths.

Exhausting air also means that replacement air must be brought inside which, if either significantly above or below indoor air temperatures, must also be pre-treated through make-up air processes. These units have high initial capital costs with significant ongoing operating costs.

Similar problems exist for many other industrial situations where a large size workspace is required either to keep dirty air away from a critical process, or where air is made dirty by a process and other employees need to be protected from the contaminated air. DuroAir provides a perfect solution for almost any Clean Room application.

Too often, due to lack of available economical solutions, industries solve these problems by improperly conducting these processes outside resulting in non-conforming air pollution; or the processes are conducted inside exposing employees to unsafe breathing air.

Through the combination of its already patented, Tapered Airflow technology, and its now patent pending, DuroPure Indoor Air Recycling technology, DuroAir has an employee-safe, environmental and economical solution for just about any indoor air problem.

Retractable DuroRoom enclosure systems solve many problems including not permanently taking up indoor real estate; allowing for use of overhead cranes to move large or heavy objects in place which can be enclosed after they are put in place; and due to their modular design, can be manufactured to any size enclosure without the need to re-engineer the system. All enclosures regardless of size, balance the air with horizontal tapered airflow which allows for much faster drying of water-based coatings by creating an "air envelope" that is not susceptible to contamination from dusty or dirty floors.

DuroAir can also match DuroRoom to its more conventional DuroCap filtration system that captures virtually all contaminants and particulates before exhausting the cleaned air outdoors in a completely environmentally compliant manner.

Adding DuroPure indoor air filtration systems to a DuroRoom configuration allows the user to conduct any type of operation that creates contaminated air,

Knowing Your Filters

Collecting very different types of overspray (solvent based, water based, adhesives, stains, baking enamel and more) requires very different types of filters.

Impingement type filters include cardboard baffle style and accordion style. These high capacity filters maintain their efficiency level and air flow over the life of the filter. They do not adversely affect airflow until they are 95 per cent or more loaded.

Impaction type filters are highly efficient and made up of paper mesh, fibreglass and polyester pockets. As they load they become more efficient and airflow is continuously reduced over the life of the filter. In the end the filter is completely "blinded" and air flow virtually non-existent.

There is a wide choice of booth inlet filters depending on customer preference and the application. Proper selection of air intake filters for enclosed paint and powder coating booths requiring a dust free environment can prevent product rejects. Filters vary from roll media or cut pads, flat media or extended surface, un-constructed or self-supporting, tacky or dry texture. Paint arrestors are the most varied and expansive filter group for the paint and coatings industry. They vary in weights, thicknesses, densities, sizes and materials of construction.

and therefore avoid the high costs of treating and exhausting the air outdoors in an environmentally compliant manner. This provides a low cost solution to those industries that currently have no method of avoiding non-compliant air contamination either indoors or outdoors.

DuroAir products are also simple to install with most installations being completed in just a few hours. DuroAir is based near Toronto, Canada and has developed an extensive distributor network throughout North America. It has also modified and sold systems to be compliant internationally. All components are made only in Canada and the Unites States.

Case Study

The Industrial Hygiene Assessment report was issued January 31, 2013 by Ontario Environmental and Safety Network Ltd. (OESN). OESN was recommended by the Ontario Ministry of Labor as a competent independent company capable of making the assessment required for such a significant technological breakthrough such as what DuroAir has produced, and as an Agency that the Ministry would rely upon.

As stated in the report, DuroAir requested OESN to provide an evaluation "to determine if the spray booth and filter technology (which exhausts directly into the surrounding indoor space) is effective in capturing contaminants and therefore will not impact the surrounding indoor environment where it is used." The report can be summarized as follows:

- Four primary areas of concern were monitored including Hexamethylene Diisocyanate ("HDI"), Volatile Organic Compounds, general Indoor Air Quality and noise;
- No compound identified ever exceeded allowable limits set in Ontario as prescribed by Ontario Regulation 833/90;
- No HDI monomers were detected at all;
- Some HDI oligomer was detected but at a level of less than half of the limit suggested by the only known jurisdiction in North America (Oregon) to name a limit;
- Data suggests occupational exposure limits for carbon dioxide, carbon monoxide and particulates (not otherwise specified) will not be exceeded Measurements indicates that 99 per cent of noise measurements were below 60 dBA

In general, while tests were conducted in an environment of continuous coatings applications for a period of 8 hours, whereas most industrial applications would only be at a substantially less intense rate, the DuroPure system demonstrated itself to be perfect in capturing all compounds that have the potential to be harmful to humans working in surrounding areas.

DuroAir designs and manufactures a wide variety of technology solutions for many industrial markets that assists companies to provide both employee safe, and environmentally compliant Indoor Air Quality ("IAQ") treatment systems.

Manufacturers are stepping up to provide spray booth systems that are designed to be the most effective, lowest cost systems that meet all regulatory requirements in all jurisdictions in North America.

New Light Stabilizer Solutions

Clariant, a world leader in specialty chemicals, introduces innovative Hostavin light stabilizer solutions to make waterborne coatings the new high-performance and more environmentally-oriented option for exterior protective applications, previously an exclusive area of solventborne systems.

Clariant's synergistic solutions based on recently launched UV absorber Hostavin 3330 disp. XP and Hostavin 3070 disp. XP, a non-migrating high molecular weight HALS, optimize light stabilization for clear and pigmented waterborne coatings. As the market is replacing its long-term emphasis on solvents with a step-by-step transition towards waterborne systems, Clariant now offers the coatings industry opportunities to fill the performance gap, especially in premium segments such as exterior wood protective coatings, as well as high-end industrial and automotive coatings.

Hostavin 3330 disp XP is the first high loaded waterborne dispersion of a triazine class UV absorber, the latest generation of UV absorbers. Formulated at 52 per cent UV absorber content, it brings a significant improvement in UV protection for waterborne systems. It offers high thermal stability and superior durability for effective prolonged service life, displaying high extinction in the protection of thin layers. It does not contain any VOC compounds, and its excellent compatibility with binders makes it easy to incorporate and handle for paint producers.

The addition of Hostavin 3070 disp. XP in the formulation enhances these performance benefits further, thanks to its higher thermal stability combined with an excellent migration resistance. Furthermore, its improved toxicological profile, compared to traditional HALS, makes it free of any hazard labeling.

For manufacturers, the high loading of active ingredients and excellent compatibility in the binder enable them to benefit from more cost-effective formulations. For the finished coating, durability and overall coating performances are improved. For example, enhanced gloss retention and minimized color change are achieved for high-end clear coats such as those used in OEM automotive plastic coatings.

www.clarient.com

Automated Pull-Off Testers

The Proceq DY-2 family of automated pull-off testers, Paul N. Gardner Company, Inc. covers the complete range of pull-off applications with unmatched ease of operation and a unique capability to store a complete record of the test.

Pull-off testing is one of the most widely used test methods in the construction industry;.

aAn indispensable for the diagnosis of structural damage to buildings and checking complete renovation work.

The three models of the DY-2 Family differentiate by a maximum pulling force. While DY-216 (15.5 kN, 3485 lbf) is covering most applications, DY-206 (6 kN, 1349 lbf) has an increased accuracy for low strength applications, such as testing adhesive strength of mortars and renders. DY-225 (25 kN, 5620 lbf) can be used for very high strength applications, such as testing of fiber reinforced polymers bonded to concrete structures or testing the bond strength of repair and overlay materials.

One of the major influences on the result of a pull-off test is the operator influence in the application of a constant load rate. The newly introduced DY-2 models with their integrated, feedback-controlled motors remove this variable completely, by providing a fully automated test at a constant load rate, which can be verified.

The DY-2 is further unique in that it records every single test parameter required by the specification: Time and date of the test, test disc size, maximum load applied, automatic calculation of bond strength, applied load rate with graphical record, complete time of test as well as the failure mode.

For the very first time, the operator is able to provide a complete record of the pull-off test, proving that the test was carried out in accordance with the applicable standard.

The DY-2 is further unique in that it records every single test parameter required by the specification.

- Time and date of the test
- Test disc size
- Maximum load applied
- Automatic calculation of bond strength
- Applied load rate with graphical record
- Complete time of test
- Failure mode

www.gardco.com

WALTER SURFACE TECHNOLOGIES Announces Key Improvements to New ENDURO-FLEX and ENDURO-FLEX TURBO Finishing Discs

The most durable flap discs on the market today are now better than ever before. Walter Surface Technologies (WST), a leader in innovative solutions for the metal working industry, today announced key enhancements to its cutting edge line of flap discs branded as Enduro-Flex and Enduro-Flex Turbo for metal finishing applications – earning high marks in finishing performance,

removal rate and cost efficiency.

When it comes to the metal fabricating and finishing industry, having high performance and being eco-friendly are no longer mutually exclusive. In addition to being the highest performing finishing discs on the market, the best selling Enduro-Flex now foregoes the traditional plastic backing and has been improved with an innovative ECO-TRIM backing made from a base of natural and sustainable plant fibers. In 2013, Walter will manufacture millions of Enduro-Flex flap discs with the new backing – helping to dramatically reduce plastic production output. Using less plastic reflects Walter's clear commitment to reducing the overall ecological footprint. A percentage of Enduro-Flex sales will go to funding the planting of new trees to regenerate forests for future generations.

Designed as the ideal solution for finishing steel and stainless steel, Enduro-Flex flap discs require fewer changeovers, which help reduce waste and ensure greater operational efficiency. In comparative tests between flap discs, Enduro-Flex set the industry standard with 130 per cent more steel removed than leading competition. This saves both time and costs while simultaneously providing an environmentally sound solution. A 5-inch disc with Grit 40 removes up to 2,500 grams over its lifespan – performance is comparable in other Walter disc sizes and different grit sizes.

www.walter.com

NitroHeat

What if you could save 35 per cent in your paint costs annually? NitroHeat is technology and simplicity . . . an affordable and highly efficient heated nitrogen system designed specifically for industries utilizing spray paint processes. This system conveniently plugs right into your compressed air system and converts it to 98 per cent nitrogen, so it atomizes better, lays down better and flashes off faster. Shorter tack times, faster to dust-free and less waiting between coats means measurably more efficient throughput – up to 20 per cent faster. Manufacturers report material savings up to 35 per cent.

Wedge Clamp's NitroHeat nitrogen-charged painting systems are distributed throughout Canada.

www.wedgeclamp.com/nitroheat/

Belzona Overcomes Recurring Roof Leakage

Roofs are the most exposed area of any building and are susceptible to damage and deterioration from the elements. It is essential that they are kept watertight. Belzona Liquid Applied Membrane systems offer unrivalled water and weatherproofing solutions for all types of roofing substrates, complex architectural design and insulations.

A Belzona Authorized Contractor for Belzona completed and application for a client that had two flat roofs at their service centre which had been subject to leakage. Damage from rainwater, as well as the continuous moisture from the adjacent air handling units, had caused internal dampness problems and required a long term repair to prevent further problems.

Belzona 3131 (WG Membrane) was specified to repair and protect the flat roofs due to the frequent bad weather experienced over the winter months. Belzona® 3131 (WG Membrane) is a single component, moisture activated coating for the long term repair and protection of all types of roofs. It is an easily applied polymer coating which is designed for all weather conditions, and will not be damaged by rain immediately after application.

The application was completed over the course of two days ensuring minimal disruption to the client. On day one, the two flat roofs were made clean and dry and an application of Belzona 3921 (GSC Surface Conditioner) was applied. This was left to cure overnight. The second day, Belzona 3131 (WG Membrane) was applied in two coats incorporating Belzona 9361 (reinforcing Sheet).

www.belzona.com

Polyscope Extends XIRAN® Portfolio with Low Molecular Weight Styrene Maleic Anhydride Co-polymers

Polyscope, the world's leading producer of styrene maleic anhydride co-polymers, has launched two new product grades with a lower molecular weight, to extend its existing portfolio of XIRAN® styrene maleic anhydride co-polymers.

Developed specifically to meet customer needs, the two new grades, XIRAN SZ25010 and XIRAN SZ40005 each have a significantly lower molecular weight compared to existing XIRAN grades. New product XIRAN SZ25010 has a Mw of 10,000 and XIRAN SZ40005 has a Mw as low as 5,000. In addition, the former grade (XIRAN SZ25010) has a 25 per cent maleic anhydride content and the latter (XIRAN SZ40005) has an even higher maleic anhydride content of 42% for added functionality.

This brings a number of key benefits for formulators, including easy process-ability of adhesives;

faster and more stable processing of composites; better and more durable colours in coating and paints; and better printing properties in paper, with a higher quality end-result in the print.

XIRAN co-polymers with a low molecular weight are the products of choice in many applications where solutions with higher solids, lower viscosities, and excellent wetting and dispersion properties are required. Current and new applications which will benefit from these two new XIRAN grades include, amongst others, filler, tackifier and pigment dispersions, formaldehyde free binders, superplasticizers for concrete, adhesion promoters, crosslinkers, and matting agents.

www.polyscope.eu

Self-bonding Masking

MOCAP's silicone rubber X-Treme Tape is a self-bonding flexible masking tape that offers features not found with conventional masking tapes. This rubber tape will stretch wrap to conform to irregular shapes and features no adhesives, which means there will be no secondary clean-up after high-temperature processing. The tape will protect and mask during plating and conformal coating as well as high-temperature powder coating, as the tape will resist up to 500° F (260° C) and removes easily. In many cases, it can eliminate the requirement for a 'custom' mask.

The tape is available in a wide variety of widths, lengths and colors.

www.mocap.com

TruQC

Revolutionary job-site documentation now available from TruQC is changing the way job sites are managed. This new technology ensures objective field-data collection and increases operational efficiencies. A versatile TruQC Document Library keeps everything in one place and is compliant with NACE, OSHA, SSPC and other industry standards as set by federal regulatory agencies. Dedicated to job-site safety, better inspection practices and more efficient time tracking and accounting methods make TruQC products the natural replacement for traditional paper-based job site documentation.

TruQC is a permission based platform allowing maximum flexibility for administrators to set job parameters, control employee access and set forms and timelines. The auto-populate function, which lists important job information from traditional field documents are easily locked. By setting up specification limits TruQC will alert administrator when an "out-of-spec" item occurs. TruQC utilizes cloud technology and real time syncing for secure, safe data storage. With real-time full access you can be confident audits and submissions, and reports are accessible and signed by the necessary parties.

DeFelsko Bluetooth and WI-FI enabled device are TruQC compatible allowing all forms to be retrieved electronically or produced as a PDF. These forms are time, date, GPS, photo and signature stamped securing these readings against being altered or removed.

A centrally located administrator can see exactly what readings are being obtained and where in the inspection process a project is and keep up to date on any job at any time. Job-pertinent data is always at your fingertips-literally where data service is available. TruQC will back up your data hourly, daily, weekly and monthly. Where no data service is available the information will be stored locally until service is available. You own this information and can request a copy any time.

TruQC allows you to set permissions for approved email notification to an owner or general contractor to review and receive notification of documents, on hold points or change orders as needed saving the owner and contractor money.

TruQC is available in Canada exclusively through Stone Tucker Instruments.

www.stone-tucker.com

New Nordson ColorMax 2 Powder Coating System

Nordson Corporation, a leader in liquid and powder coating technologies, introduces the ColorMax 2 engineered powder coating system. The new, fully integrated system incorporates features that ensure fast, contamination-free color change, easy installation and trouble-free maintenance, allowing powder coaters to increase productivity and line efficiency.

With the ColorMax 2 system, all powder contact surfaces, including the innovative Nordson breakaway cyclone, are accessible for easy cleaning and visual inspection. The patent-pending dual cyclone enables the upper and lower sections to be disconnected for thorough cleaning. With most powders, the interior surface of the cyclone can be cleaned with just a compressed air wand. Splitting the upper and lower cyclone sections helps make this easier and more effective. With the breakaway cyclone, you can actually "see, clean and touch" the entire interior surface to make absolutely certain it is clean.

In addition, the ColorMax 2 booth features a non-conductive canopy for minimal powder attraction and retention. Constructed with patented Apogee composite material, the booth's is designed for minimal powder in process and faster color change. Less attraction also means less powder to clean during color change and easier removal of the powder from the canopy using only compressed air. The stainless steel booth floor provides maximum durability and grounding of operators during cleaning for safety.

Other features that minimize powder build-up and speed color change include:

AeroWash Base Cleaning System – with air knives that use compressed air to periodically remove settled powder from the booth floor

AeroDeck Air Distribution System – this high velocity air stream keeps airborne powder from the AeroWash air knives moving to the cyclone

Automatic gun cleaning – high pressure air knives are provide automated cleaning of the gun exterior, eliminating disassembly and manual labor

Other Integrated Components Provide High Efficiency and Productivity

As a fully integrated, engineered solution, the ColorMax 2 system also features Nordson technologies to ensure system efficiency, including the iControl 2 integrated control system, Prodigy HDLV technology, Encore feed center and in-line pump, and Encore manual and automatic guns. The system also incorporates a higher level of factory preassembly, including a new pre-wired, pre-plumbed utility deck that significantly cuts installation time.

iControl system – provides up to 255 user-configurable presets for part identification and in/out positioning of reciprocators and oscillators, as well as speed and stroke of reciprocators.

Encore powder feed center – can accommodate up to 27 pumps and incorporates an innovative vibratory sieve with deck screen that helps to eliminate any potential contaminants from both virgin and reclaimed powder sources.

Prodigy HDLV technology – the transfer pump continuously evacuates powder from the twin cyclone resulting in maximum efficiency and minimal powder in process.

Encore manual and automatic guns – provide high transfer efficiency and consistent coating quality.

www.nordson.com

SmartOne

Process Technology introduces the SmartOne line of PTC (positive temperature coefficient) electric immersion heaters, the only PTC heaters that are cULus listed. SmartOne heaters are self-limiting and therefore do not require thermal protectors. They can operate in air, scale and sludge, and will not ignite most plastics. Process Technology manufactures electric immersion heaters, inline heaters, heat exchangers, instantaneous water heaters, temperature and liquid level controls, solenoid valves and accessories – designed for heating and cooling of chemistry for wet process manufacturing with both standard and custom configurations available. The company specializes in corrosive applications and incorporate chemically resistant materials of construction including fluoropolymer (PTFE), titanium, quartz, stainless and plain steel. cULus and UL/CSA/CE third party certifications are standard for most products.

www.processtechnology.com.

GF Piping Systems Introduces Second Generation Signet 9900 Transmitter

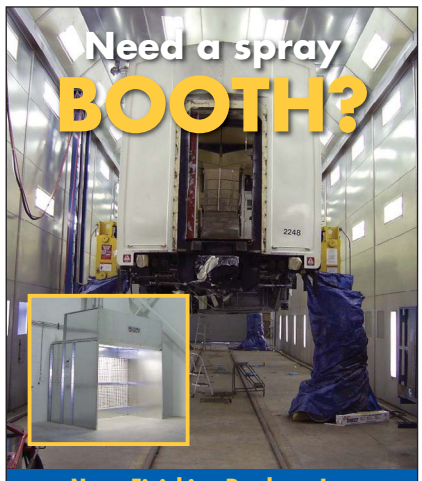
GF Piping Systems has introduced the second generation Signet 9900 Transmitter featuring a Batch Controller option along with all the proven features of the original model. The new Signet 9900 Transmitter (Generation II) supports multiple parameters that include flow, pH/ORP, Conductivity/Resistivity, Salinity, Temperature, Pressure, Level, and 4 to 20 mA Signals, and now also Batch Systems. Customers can convert their second generation 9900 Transmitter to a Batch Controller System by simply plugging in the new Batch Module and Relay Module, thereby maintaining the product's original intent of consolidating multiple platforms into one while increasing their service level and reducing inventory.

New capabilities include the ability to save up to 10 batch sizes for batching or blending a variety of liquid volumes, customizable batch names for easy distinction between batches, entry of different K-Factors for each batch, a confirmation feature for preventing accidental batch starts, a manual Batch feature for 'topping off', an override Batch Size function and a Batch Count indicator.

The 9900 features an extra large (3.90" x 3.90") auto-sensing backlit display that allows visibility at 4-5 times the distance of other transmitters.

Designed for complete flexibility, plug-in modules enable the unit to be easily adapted to meet changing customer needs.

www.gfpiping.com



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AD INDEX

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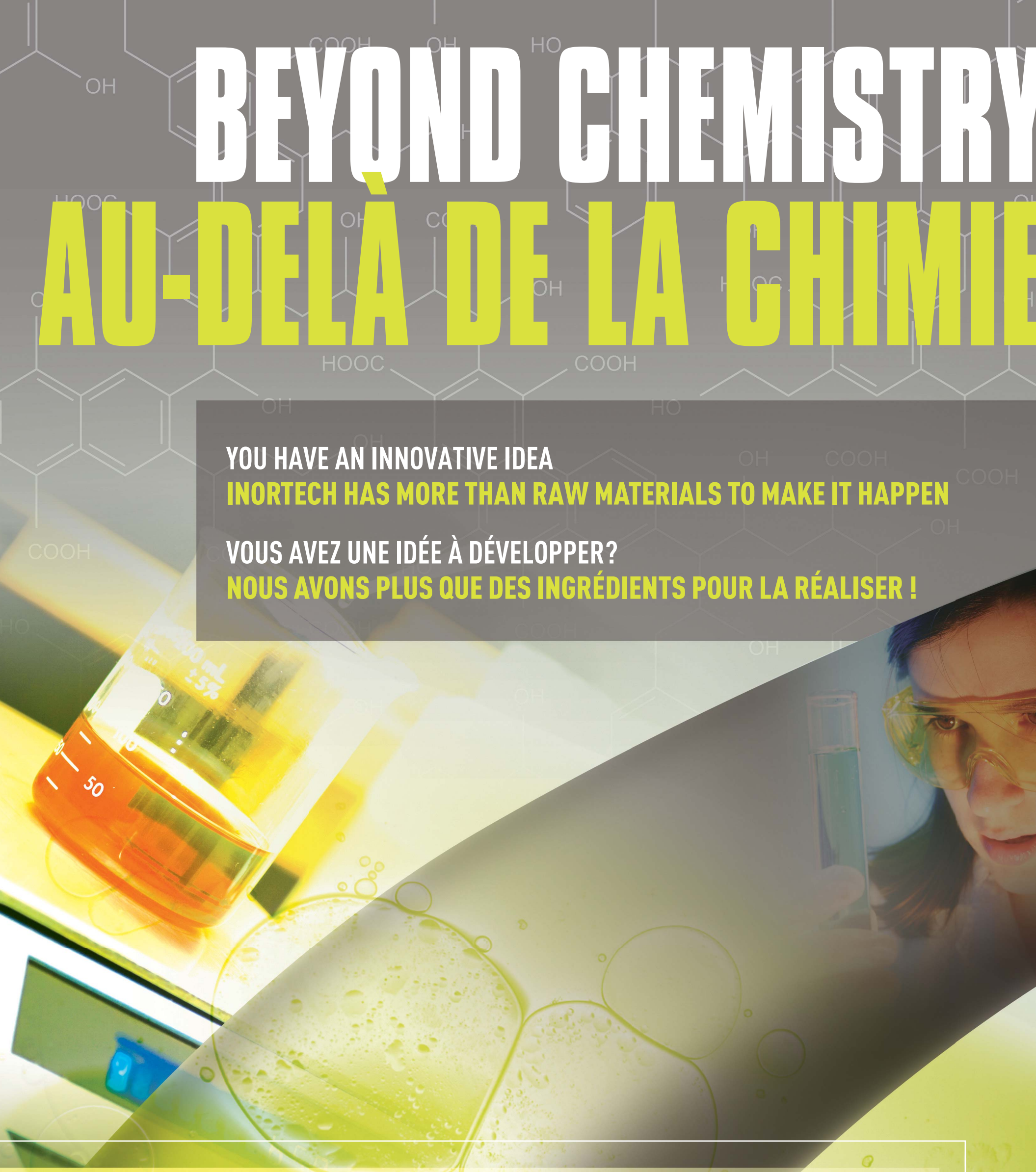

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