



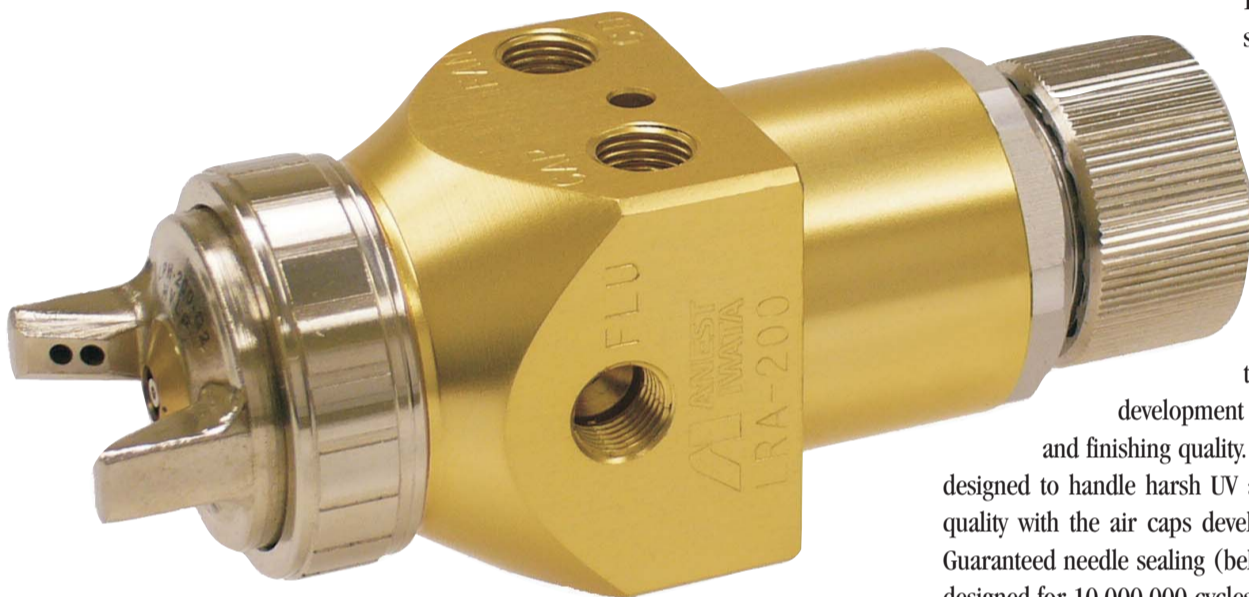
CFCM

CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

\$12.00

May/June 2014

Automatic Liquid Spray Technologies



Anest Iwata's LRA200 high performance gun.

Manufacturers of Automatic Liquid Paint Spray Guns are listening to their customers' needs and providing guns equipped with the newest technologies.

ANEST IWATA automatic spray guns are available in various configurations to suit a wide range of applications. From our SGA100 miniature size model to the LPA200 full sized model, the company's automatic guns offer multiple mounting and spraying options.

The WRA100, WRA200 and the LRA200 high performance guns have compact gun bodies that may be used within a circulation system as well as PLC controlled.

The LRA200 full size high performance HVLP automatic spray gun is ideal for applications requiring precise spray pattern control or fluid circulation.

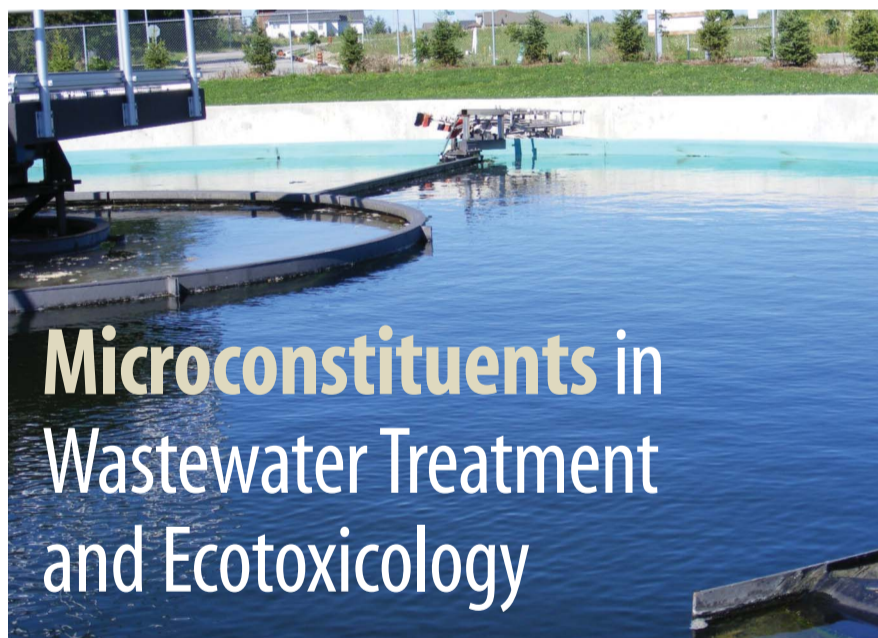
EXEL North America, Inc. introduces the A25 F, automatic gun with Flowmax technology designed for intensive use. With its unsurpassed bellows design, the Flowmax A25F ensures complete leak free sealing, maximum performance, extended life and unmatched reliability. The technology developed is the result of many years of fundamental research and development to achieve the best results in terms of transfer efficiency and finishing quality. There is also minimal maintenance. The gun has been designed to handle harsh UV and abrasive materials. It has exceptional atomization quality with the air caps developed jointly with the company's automotive partners. Guaranteed needle sealing (bellows technology), can be remotely controlled, bellows designed for 10,000,000 cycles unmatched in the industry, fluid inlet at base with side ports ideal for robotic and reciprocator installations. Designed to cater to military, aerospace, leather, kitchen and bathroom, wood flooring, windows and doors. Guns

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ALSO IN THIS ISSUE

- Nickel Plating
- Decorative Anodizing
- Pigments
- Waterborne Resins
- Paint and Solvent Recycling
- Robots and Gun Motion
- Solvent Recovery Equipment

MUCH MORE!



Microconstituents in Wastewater Treatment and Ecotoxicology

BY JOHN SELDON

The organic "exotics" found in wastewater are gaining more and more attention. We have been here before. Typically, municipal wastewater plants are regulated according to the concentration of Suspended Solids (SS), Biochemical Oxygen Demand (BOD), Phosphorus (P) and Nitrogen (N) in their effluent discharge. These parameters are measured in the mg/l levels, typically 15, 15, <1.0 and 2.0 mg/l respectively. Although these meas-

urements are not likely to be removed from plant regulatory criteria any time soon, they are in the writer's opinion blunt regulatory measurement instruments needing replacement with more sophisticated diagnostic guidelines. One municipality's BOD composition may vary widely from its urban and rural neighbors both up and downstream from its outfall. Wastewater treatment plants (also known as Water Resource Recovery Facilities, WRRF) would seem destined for change, in part, due to three general realities:

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In the News

Association News

2014 SUR/FIN Manufacturing & Technology Conference & Tradeshow Agenda

The 2014 National Association for Surface Finishing (NASF) SUR/FIN Conference and Tradeshow, the finishing industry's highest regarded show, released its much anticipated agenda featuring more than 90 speakers and 15 comprehensive sessions. Now in its 96th year, SUR/FIN provides the global industrial finishing industry with cutting-edge content and unparalleled networking opportunities in a dynamic business-to-business environment. SUR/FIN is the longest running conference in the industry – and the only event produced exclusively by the National Association for Surface Finishing.

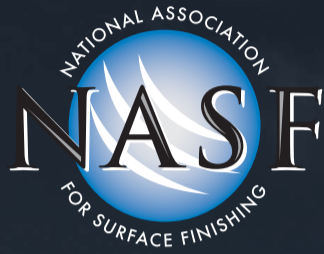
"We're quite pleased with the response we received for papers," said Brad Wiley, Chairman of NASF's Technical Advisory Committee. "This conference brings together the brightest minds and the latest technologies and processes available in the surface finishing industry today. This conference, coupled with its dynamic tradeshow featuring more than

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SOLUTIONS

FOR A SUSTAINABLE FUTURE



For 96 years NASF's SUR/FIN Manufacturing and Technology Tradeshow & Conference has been the "go-to" conference and tradeshow for the industry. For finishing, it's unlike any other manufacturing conference.

CREDIBILITY

The only conference and tradeshow sponsored by the NASF, the industry-leading association representing the business, technical, scientific, and educational interests of the global surface technology community.

NEW MARKETS

Millions of products we use every day are "finished" with some form of coatings technology. New companies participate each year to gain new knowledge, technical solutions and product insight.

INNOVATIVE ANSWERS

Over 175 exhibitors with new ways to solve your company's manufacturing challenges.

EXPERT SESSIONS

Top industry experts—your colleagues—present the latest information on optimizing processes, plant operations, environmental updates, and emerging regulatory developments. **Sessions include:**

- Industry Sustainability
- Light Materials Finishing
- Finishing for Electronics
- Aerospace Hexavalent Chromium and Cadmium Alternatives
- Best Practices in Surface Finishing
- Plant Energy Solutions
- Advances in Plating & Surface Finishing I
- Regulatory Updates
- Hard Chrome Alternatives & Wear Resistant Coatings
- Automotive Decorative Processes
- Chemical Milling
- Corrosion
- Aerospace Aluminum and Organic Coatings
- Functional Automotive Finishing Processes
- Advances in Plating & Surface Finishing II
- Clean Manufacturing and Processing



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 (formerly Met-Pro Corp.)
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 World Resources Company
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KEYNOTE PRESENTATION



Duane Drobnic
 Ford Motor Company

Wednesday, June 11, 11:15AM - 12:15PM

As a successful leader in the finishing industry, Duane Drobnic leads a team of highly experienced engineers in the development and implementation of new finishing technology for one of the world's most recognized and respected brands, Ford Motor Company. Mr. Drobnic is also responsible for global design and commonality strategies as well as Ford Worldwide Fastener Standards. Mr. Drobnic has over 30 years of experience in fastener and finish design, development and testing and has been instrumental in forming Ford's global business plans.

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Self-Cleaning Paint

Spring is here and so is the season for washing cars. Car manufacturer Nissan would like to help with that.

Nissan in Europe has begun tests on an innovative paint technology that repels mud, rain and day-to-day dirt.

The specially engineered super-hydrophobic and oleophobic paint has been applied to the new Nissan Note thus creating the world's first self-cleaning car.

Engineers at Nissan Technical Centre Europe will be testing the effectiveness of the super-hydrophobic self-cleaning coating on the Note over the coming months in a variety of conditions.

Nissan is the first auto manufacturer to apply this Ultra-Ever Dry technology on bodywork. By creating a protective layer of air between the paint and environment, it effectively stops standing water and road spray from creating dirty marks on the car's surface.

The coating, marketed and sold by UltraTech International Inc., has responded well to tests in rain, spray, frost, sleet and standing water. While there are currently no plans for the technology to be applied to the model as standard, Nissan will continue to consider the coating technology as a future aftermarket option.

Spring last year, Nano Labs Corp. of Detroit announced the development of a new self-cleaning paint that degrades pollutants through a proprietary nanoparticle compound and natural light. The eco-friendly coating helps exterior surfaces maintain performance and appearance standards for much longer periods of time.

Most self-cleaning coatings rely on either texturization or high surface energy. In the case of texturization, commonly referred to as "the Lotus Effect", pollutant

particles are picked up by water droplets due to the nano or micrometric architecture of the surface, which minimizes adhesion. The second case is the use of high surface energy materials, like Teflon, to coat the surface. Both of these applications are expensive and hard to apply in large areas, such as commercial large square-foot applications.

The novel approach captured by the team at Nano Labs is based on a unique nanoparticle compound.

The next issue of CFCM is our much anticipated Annual Buyers' Guide. Please go to our website and either update or add your free listing online. All that appears online in a timely fashion will appear in our print version to be mailed in July 2014. Please go to: <http://www.cfcmmercuryemail.com/>

Also, if you have a New Product press



release that you would like us to consider for future publication, please send the text in word format with a separate high-resolution photo in jpeg or tiff format to:

Sandra Anderson
sandra.anderson@cfcmm.ca

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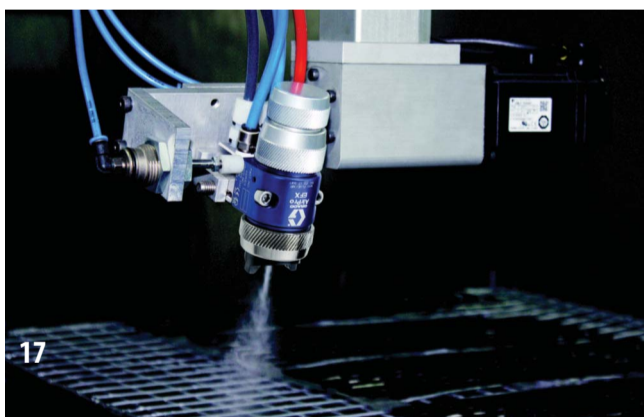
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EDITOR

Sandra Anderson
519-442-4071
Fax 519-442-1359
sandra.anderson@cfcmm.ca

COPY EDITING/PROOFREADING

E. J. Burns Anderson

PUBLISHER AND SALES

Pete Wilkinson
705-296-3030
Fax 705-296-3031
pete.wilkinson@cfcmm.ca

VICE-PRESIDENT, ACCOUNTING, CIRCULATION AND SALES

Brian Jones
905-405-1500
Fax: 905-592-1880
brian.jones@cfcmm.ca

GRAPHIC DESIGN

Allan S. Bates
416-485-9229
Green Apple Prepress
allan.s.bates@sympatico.ca

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In the News

200 companies, remains the 'go to event' in the industry."

This year's SUR/FIN is expected to draw more than 1,500 attendees, including surface finishing producers, industrial suppliers, service providers and researchers from around the world. During the course of the event, they will attend session featuring information on:

- Industry Sustainability
- Light Materials Finishing
- Finishing for Electronics
- Aerospace Hexavalent Chromium and Cadmium Alternatives
- Best Practices in Surface Finishing
- Advances in Plating & Surface Finishing I
- Regulatory Update
- Hard Chrome Alternatives & Wear Resistant Coatings
- Automotive Decorative Processes
- Chemical Milling
- Corrosion
- Aerospace Aluminum and Organic Coatings
- Functional Automotive Finishing Processes
- Advances in Plating & Surface Finishing II
- Clean Manufacturing and Processing

Find out how these and other industry topics are featured in this year's agenda. Visit NASF-surfin.com to view the agenda and register online.

Now in its 95th year, SUR/FIN is produced by the National Association for Surface Finishing (NASF) and is the industrial surface finishing industry's most targeted event featuring professionals from around the world. The three day event welcomes an exchange of ideas and experiences while offering a robust, highly respected speaker conference program that will deliver solutions to surface finishing and manufacturing challenges.

Company News

Paint sales soar for Sherwin Williams in first quarter of 2014

Increased architectural paint sales and acquisition activity in its Paint Stores Group propelled The Sherwin-Williams Company to a 9.2 per cent sales increase in its first quarter.

The company's net sales rose to a record \$2.37 billion in the quarter ended March 31, from \$199.4 million in 1913.

However, the company's first-quarter profit dropped to \$115.46 million from \$116.19 million a year ago. Acquisitions increased net sales by 4.5 per cent.

Sherwin-Williams' Global Finishes Group posted a slight uptick in net sales for the quarter.

Net sales increased 2.2 per cent, to \$497.6 million, in the quarter due to selling price increases partially offset by lower paint sales volume.

PPG Notches Banner Quarter

One record quarter apparently deserves another at PPG Industries, which reported double-digit sales growth in the first quarter of 2014 and a three-year high in global volume growth.

On Thursday (April 17), the Pittsburgh-based company reported record first-quarter 2014 net sales from continuing operations of \$3.6 billion—up 17 per cent over the prior-year period. First-quarter adjusted earnings per diluted share soared more than 40 per cent year over year, with record earnings in each major region, the compa-

ny said. The report continued a hot streak for PPG, which in January reported a record fourth quarter and one of the most successful years in its history.

Growth in the first quarter was broad based across many businesses. The company's newly expanded architectural coatings portfolio, acquired a year ago from AkzoNobel, turned in modest growth, while automotive OEM and aerospace coatings outpaced their general markets in every region. Protective coatings turned in a solid performance, and even the long-struggling European market grew.

Marine and packaging coatings were about the only segments that showed weaknesses. Overall, PPG's first-quarter report noted:

Net sales of \$3.6 billion, up 17 per cent over the same quarter of 2013;

Record adjusted earnings per diluted share from continuing operations of \$1.98, up more than 40 percent year over year;

5 percent increase in sales volume, more than double recent quarters;

Record earnings in each major region, including 39 percent growth in Europe; and

\$3.0 billion in cash and short-term investments at quarter-end.

Automotive refinish and aerospace increased sales volumes in all major regions, reflecting continued global industry growth. Architectural coatings – EMEA volumes increased by mid-single-digit percentages, for which PPG credited "partial regional demand recovery" and good weather in the region.

Industrial Coatings segment consists of automotive OEM, industrial coatings, packaging coatings, and specialty coatings and materials.

Net sales for the quarter were \$1.4 billion, increasing 7 per cent over the prior-year period. All of the growth reflected increased volume, with all regions delivering increases. Total segment earnings for the quarter were \$231 million, up 17 per cent.

Automotive OEM coatings grew by more than 10 per cent globally, with strong growth in each major region, outpacing a global industry growth rate of about 4 per cent. The industrial coatings and specialty coatings and materials businesses also delivered solid volume growth.

AkzoNobel Starts 2014 Optimistically

AkzoNobel posted its first-quarter results, highlighting increased volume and positive price/mix development in Performance Coatings, Decorative Coatings and Specialty Chemicals.

However, all business areas saw a slight dip in revenue because of adverse currency effects.

AkzoNobel's first quarter report highlighted:

Operating income was €216 million (\$298.7 million USD), a slight dip from €217 million in the first quarter of 2013.

Lower financing expenses helped boost net income attributable to shareholders to €129 million (\$178.4 million USD) from €89 million in Q1 2013.

Adjusted EPS rose from €0.51 in the first quarter of 2013 to €0.61 (\$0.84 USD) in 2014.

Restructuring charges (mostly related to Decorative Paints in Europe and Performance Coatings) increased to €44 million (\$60.9 million USD), compared to €29 million for the same period in 2013.

The company says it is on track to deliver its 2015 targets.



Chemcraft®

A Great Finish is Only the Beginning



Pentco Industries Inc. speaks out about great products and great relationships

We traveled to Surrey, just outside of Vancouver, BC, Canada to talk with Pentco about why they like working with Chemcraft products and with their Chemcraft distributor, Omega Coatings.

Pentco Industries Inc. was founded in 1979 and is one of Western Canada's largest manufacturers and distributors of cabinet doors. They produce industry leading products for single/multi residential developments, and commercial and institutional projects.

"We do a lot of multi-family high rises," said John McNulty, one of Pentco's two owners, "You can't have inconsistent colors rolling through hundreds of units. That's when we started using Chemcraft."



"Every company has a good, better, best product. Chemcraft has the greatest - Chemlife 24."

Chemlife® 24 Conversion Varnish

"Chemlife 24 has great fill, you can use it as a self-seal and it has higher solids than most products out there." continued McNulty.

"It's a go-to product. Very user friendly and cost effective. Using this product, you can cut waste by up to 30%. Consistent. Sprays the same every time." said McNulty.

"Pentco is known for quality products. We have to feel confident that every cabinet door lives up to what we say it will. That's why we have to use good coatings - and that's why we have to have good support. We can't wait a 'couple of days' for someone to show up."

"Our Chemcraft distributor representative is in here all the time." McNulty said, "Having



Front, L to R: Dallas McNulty - Manager, Pentco Industries. John McNulty - Owner, Pentco Industries. Sandra Filosof-Schipper - President, Omega Coatings. Back, L to R: Frank Brams - Sales Representative, Omega Coatings. Ian Jackson - Owner, Pentco Industries.

someone like Frank (Brams) to bounce problems off of and bring you solutions is key."

"We have sales reps in here constantly trying to get us to switch," said Dallas McNulty, Pentco's Manager. "So I asked one rep, how many changes of clothes do you have in your car? And he said to me, 'what are you talking about?' I said, 'Exactly!' Frank will stick his head in a machine and get dirty to insure our products are 100%, so he keeps a couple of changes of clothes in his car."

"That's the difference Omega and Chemcraft bring; you're buying insurance when you buy good coatings and work with good people."

Visit chemcraft.com to locate your nearest distributor.

Booth #2813



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In the News

Volume in Performance Coatings saw a 3 per cent gain from the previous year, with positive volume and price/mix development more than offset by a 6 per cent negative impact from currencies. This resulted in a revenue decline of 1 per cent compared to the first quarter of 2013. Operating income fell 2 per cent due to higher restructuring costs and currency translation.

Revenue in the Marine and Protective Coatings segment gained 2 per cent. Volume also increased, except for a slight downturn in Yacht. Deep-sea maintenance drove Marine gains, and the volume improvement in Protective Coatings was attributed to continued high activity levels in oil and gas.

Powder Coatings enjoyed volume increases and higher revenue (up 4 per cent) in all regions, with strong performance in the Transportation segment. AkzoNobel completed the closure of one of its Italian factories at the end of the quarter. Lower volumes and currencies, partially offset by favorable price/mix, caused revenue to fall 4 per cent in Industrial Coatings. Overall volumes dropped, and although the Wood segment saw growth, it was more than offset by declines in Coil Coatings and Packaging. Asia's volumes grew in Coil and Packaging, while Europe showed signs of recovery in Wood and Coil. The company announced it would close two Wood sites in the Americas.

Adverse currencies and volumes caused a 3 percent decline in revenue for the Automotive and Aerospace Coatings segment, which was partially offset by favourable price/mix. Specialty Finishes and Aerospace were flat across the board. Vehicle Refinishes volumes grew in Asia, remained stable in Europe, and declined in the Americas.

ALTANA Continues Growth Course

The specialty chemicals group ALTANA continued on its growth course in the 2013 business year. Sales increased by 4% to €1,765 million in year-to-year terms. Earnings before interest, taxes, depreciation and amortization (EBITDA) grew by 4% to €36 million. At 19%, the EBITDA margin remained unchanged at a high level. Due to increased financial expenses and depreciation and amortization from the acquisitions made in the year under review, earnings before taxes (EBT)

amounted to €13 million and were slightly lower than in 2012.

The BYK Additives & Instruments division achieved the highest sales growth in 2013. Compared to the previous year, sales rose by 12 per cent to €91 million. Just under half of the increase resulted from the integration of Rockwood's rheology activities, which is proceeding to plan. As of October 1, 2013, ALTANA acquired the rheology business of the U.S. American Rockwood Group, thereby considerably strengthening BYK's position in this product area. Positive sales effects were also provided by the acquisition of the wax additives business in the U.S. at the end of 2012. Adjusted for acquisition and exchange rate effects, operating sales rose by 7 per cent.

The ECKART Effect Pigments division generated sales of €35 million in 2013. The slight decrease of 2 per cent compared to the previous year primarily resulted from exchange rate changes. ECKART managed to keep its operating sales at the previous year's level.

Sales in the ELANTAS Electrical Insulation division rose by 1 per cent to €15 million in the 2013 business year. Adjusted for negative exchange rate effects, sales rose by 3%, primarily driven by higher sales volumes.

Sales in the ACTEGA Coatings & Sealants division fell by 3 per cent to €25 million. Slightly positive effects from acquisitions almost equaled burdens from exchange rate changes. As a result, operating sales also decreased by 3 per cent.

ALTANA anticipates the general economic climate to improve slightly in 2014. This development should be driven, in particular, by the recovery of the European markets. Against this backdrop, the Group expects sales growth, adjusted for acquisition and exchange rate effects, in the low to medium single-digit percentage range. As the rheology activities acquired of Rockwood and the acquisitions implemented by the ACTEGA division will be consolidated for the first time for a whole year, ALTANA anticipates an increase in sales in the high single-digit percentage range for the current business year. The company's return on sales is expected to be similar to that of 2013.

For the future, too, ALTANA has set itself ambitious goals. "We seek to double our business by 2020," said ALTANA CEO Wolfgruber. "This growth

should be reflected not only by sales growth to €3.5 billion, but also by new jobs. We have proven that we are able to achieve sustainable growth rates of this magnitude." Since ALTANA AG was founded in 1977, the company has increased its sales in the field of innovative specialty chemicals from €4 million to more than 70 times that amount and its workforce has grown from 259 to 5,741 as of the 2013 balance sheet date.

Global Marine Coatings Market Growing

TechNavio's analysts forecast the Global Marine Coatings market to grow at a CAGR of 11.29 percent over the period 2013-2018. One of the key factors contributing to this market growth is the expansion of the Oil and Gas market. The Global Marine Coatings market has also been witnessing the growing consumer preference for eco-friendly products; however, the strict environmental regulations could pose a challenge to the growth of this market. TechNavio's report, the Global Marine Coatings Market 2014-2018, has been prepared based on an in-depth market analysis with inputs from industry experts. The report covers the APAC and EMEA regions, and the Americas; it also covers the Global Marine Coatings market landscape and its growth prospects in the coming years. The report also includes a discussion of the key vendors operating in this market.

FutureFuel and Viachem Agreement

FutureFuel Chemical Company has signed an agreement with Viachem Ltd. to sell and market its Performance Chemicals in the U.S. This alliance was effective March 6, 2014.

FutureFuel, a world-class manufacturer of custom and specialty organic chemicals, has named Viachem as its partner for the marketing, technical sales, customer service and fulfilment of selected performance chemicals. The Performance line of chemicals are widely used in multiple end-use applications including adhesives, inks, aerosols, wire coating, masterbatch plastics, photographic chemicals and cleaners.

Viachem is a Plano, TX based specialty chemical sales and marketing company with a revolutionary system which uses a comprehensive and customized market analysis to identify potential and existing users of specialty and performance

chemicals, as well as market intelligence and technically trained sales staff to manage the sales and distribution of specialty chemical products.

Viachem has grown tremendously by serving a number of niche markets with specialty products.

Enthone Perma SHIELD 1000 Zinc-Nickel System Approved by General Motors

Enthone is proud to announce the approval of the company's Perma SHIELD 1000 zinc-nickel system by General Motors to meet the GMW4700 Zinc Nickel Type B requirement. The approval was granted for the following processes:

- ZINCROLYTE KLC-NI ammonia-free, acid zinc-nickel;
- PERMA PASS Ultra IV Plus low temperature, transparent passivate, and ;
- ENSEAL 1303 sealant specially formulated to meet automotive requirements.

The Perma SHIELD 1000 system provides superior corrosion protection to red rust, while also demonstrating exceptional performance to white corrosion. Applicators have achieved substantial productivity gains as a result of dramatically reduced plating times on high hardness parts due to the system's exceptional initiation and efficiency. enthone.com/brakes.

Ashland completes expansion of manufacturing facility in Georgia, installs Nuosept biocides production line

Ashland Specialty Ingredients, a commercial unit of Ashland, Inc. has completed a 13,000-square-foot expansion of its Macon, Ga., facility and moved its Nuosept biocides production line to the new space. By moving Nuosept biocide production from Leaside, Ontario, to Macon, Ashland has increased production flexibility and efficiency. The production lines are now fully operational.

"Biocides volume comes in surges," added Russell Jerusik, biocides product manager, Ashland Specialty Ingredients. "When we need to produce large volumes, we can use the full plant staff. Conversely, we also have the flexibility to produce very quickly with very little lead time." That same flexibility, Jerusik said, enables Ashland to produce different blended products and volumes simultaneously and efficiently.

Jerusik noted synergies in manpower and equipment that can be applied to biocides. "We can optimize our inventory," he said. "We can make what we need, not more."

The plant also has a pilot-sized, mini-mill to produce experimental batches. The mini-mill helps Ashland innovate and develop new biocides that can then be scaled up to production volumes. The mini-mill also enables technicians to look at variations in the manufacturing process and troubleshoot customers' production problems.

Cefla Live Demonstrates New Equipment & Processes

With their latest "Cefla Live" event, held April 9-11, 2014, the Cefla Finishing Group offered their customers, vendors and sales force a look at the exciting present and exceptional future of finishing.

With equipment demonstrating wood and glass applications, a new Easy Reciprocating Spray machine, high-resolution digital printing, a compact flooring finishing line, moulding finishing and profile-wrapping, there was something for everyone involved in finishing processes.

Dozens of customers, sales and supplier rep-

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representatives discussed better ways of serving their markets, received training and updates on new technology, and developed stronger business contacts.

The next Cefla Live event is scheduled for the Fall 2014, with details to come.

Cefla North America offers the broadest range of finishing and coatings application equipment on the market today. Cefla has solutions to coat virtually any substrate; wood, metal, glass, plastics and composites. Spray equipment, roll coaters, vacuum coaters, drying ovens and many other automated systems help customers be more successful.

www.cefafinishinggroup.com.

Innovative Product of the Year Winner—DeFelsko Corporation

DeFelsko's PosiTector Interchangeable Probes for inspection instruments has been named a Materials Performance Corrosion Innovation of the Year.

The American designed and manufactured PosiTector body accepts all interchangeable probes including coating thickness (6000/200/PC), environmental (DPM), surface profile (RTR/SPG), and ultrasonic wall thickness (UTG) probes.

This innovation allows quick and easy conversion from a coating thickness gage to a surface profile gage, dew point meter or ultrasonic wall thickness gage with a simple probe change. Each probe retains its own unique calibration information allowing for full probe interchangeability, an industry first.

The MP Corrosion Innovation of the Year Awards showcase progressive technological developments in all aspects of corrosion prevention and mitigation and recognize the innovators who have created revolutionary solutions to combat corrosion and protect vital assets from its damaging effects.

Winners were announced at the recent Corrosion 2014, NACE International's leading corrosion conference and expo.

David Beamish, DeFelsko President, was on hand to proudly accept the award on behalf of the entire DeFelsko staff located in Ogdensburg, New York. "We are very honored that a panel of leading experts in the field of corrosion chose our interchangeable PosiTector probes as the most innovative product," said Beamish, "A sincere thank you to all who voted for us as we continue to pioneer new instrumentation for iGeneral Motors Co. (NYSE: GM) today announced first quarter net income attributable to common stockholders of \$0.1 billion, or \$0.06 per diluted share. Strong core operating performance during the quarter was more than offset by a net loss from special items of \$0.4 billion, or \$(0.23) per diluted share, and a \$1.3 billion pre-tax charge primarily for the cost of recall-related repairs, or \$(0.48) per diluted share.

Record Attendance at ACS

In its first showing in Atlanta, April 8 to 10 2014, the American Coatings Show (ACS) 2014 again set new records in all categories. With 480 exhibitors and 8,700 participants from 70 countries, the fourth edition of the American Coatings SHOW & CONFERENCE broke all of its previous records for visitors, exhibitors and footprint.

The ACS is the paint and coatings industry's premiere destination for exchanging the most current information about an extensive range of products and industry practices. Organized by the

American Coatings Association (ACA), the show attracts top coatings development decision-makers for a high-level exchange of information.

"Preliminary data for the American Coatings Show and Conference held great promise that this year's event would exceed previous year's success, and that challenge has been met. Our goal is to continue meeting the needs of professionals and companies in the coatings industry, and we look forward to providing another high-quality forum in 2016." said Andy Doyle, ACA president.

The exhibition and trade show portion of the event surpassed its 2012 footprint by over 20 per cent. The exhibit space expanded from 91,000 to 110,000 net square feet due to an increase of total exhibitors and previous exhibitors leasing larger booth space.

More than 1,000 coatings industry professionals attended the CONFERENCE, from April 7-9, to learn about the most recent research results and industrial developments in 16 thematically structured sessions with topics such as smart and functional coatings.

The fifth American Coatings SHOW & CONFERENCE

is scheduled for April 11-14, 2016 at the Indianapolis Convention Center in Indianapolis, IN. www.american-coatings-show.com

101 Annual CPCA Conference to be Held In Quebec City

The CPCA 101st Annual Conference and AGM will be held in beautiful Québec City this year from October 5-7, 2014 at the Hôtel Château Laurier Québec. The association expects approximately 100 paint and coatings professionals from across the country to take advantage of this opportunity to network, learn more about current issues and trends, and celebrate the achievements of colleagues.

The conference will start on Sunday afternoon with a Welcome Reception in the evening. Monday's schedule features Technical Committee Meetings discussing current issues facing the paint and coatings industry in Canada, followed by the Chair's Gala and Award Ceremony in the evening. Tuesday's agenda includes a full day of Business Sessions covering topics ranging from sustainable technologies, green building, colour

trends, construction and infrastructure renewal, skills shortage, economic outlook and much more. www.canpaint.com

Correction

In the January/February 2014 issue of CFCM on page 52 concerning photo coverage of the Canadian Association of Surface Finishing's Environmental Forum, Stephen Spray was incorrectly identified as being from Ardaven Plastics rather than from Ardaven Platers. CFCM apologizes for any confusion this may have caused. Ardaven Platers Limited, Toronto, ON, has been providing quality Barrel and Rack Electroplating to many industries since 1963.

ERVIS B. WEBB COMPANY Recognizes Top Distributors

Jervis B. Webb Company, a subsidiary of Daifuku Webb Holding Company, hosted its 31st annual Unibilt/Unibeam conveyor distributor conference in early April in New Orleans, Louisiana. During the conference, Webb recognized the following top ten conveyor chain distributors based on sales in 2013.



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In the News

- Therma-Tron-X, Inc., headquartered in Sturgeon Bay, WI
- Phoenix Installation and Management Company, Inc., headquartered in Shelbyville, KY
- Finishing Technologies, Inc., headquartered in Portland, OR
- DanMar Installations, Inc., headquartered in Memphis, TN
- Conveyors & Drives, Inc., headquartered in Atlanta, GA
- MAGNUM Automation, Inc., headquartered in Mississauga, ONT
- D.L. Systems, Inc., headquartered in New Brighton, MN
- Mid-State Material Handling, headquartered in Grand Blanc, MI
- Engineered Conveyors, Inc., headquartered in Kokomo, IN
- North Mississippi Conveyor Company, Inc., headquartered in Oxford, MS

Webb's distributor network was established in 1967 as a channel for selling the Unibilt conveyor product line. Today the North American network is made up of 45 distributors. While distributors primarily supply Unibilt enclosed track conveyors, additional products have been made available, including Unibeam conveyor and Power & Free conveyor (P&F).

Canada Tops Green Building

Canada, China and India have nailed the top three spots in a new ranking of the top 10 countries outside the U.S. that are embracing the LEED movement. The U.S. Green Building Council says

the list demonstrates the global reach of its Leadership in Energy and Environmental Design (LEED) program. Project teams in more than 140 countries and territories have implemented the green-building rating system in their projects, according to USGBC. The ranking is based on cumulative gross square meters of space certified to LEED standards in each nation as of April 2014.

Canada tops the list, with 17.74 million gross square meters of LEED space. Collectively, the country boasts 4,068 total LEED-registered and -certified projects, representing 58.66 million total GSM of LEED space.

Applied Plastics Co., Inc. Celebrates 60th Anniversary In Business

Applied Plastics Co., Inc., one of the original licensed applicators of DuPont Teflon finishes in the country is celebrating their 60th anniversary. Founded in 1954 by Frank Ring, the firm specializes in supplying hypotubes and forming mandrels to medical manufacturers and in applying DuPont Teflon finishes and other functional coatings for other industries by using many different methods, depending upon the application.

Applied Plastics Co., Inc. is a family business whose president, David Ring started working there 40 years ago while attending college. "I want to dedicate this 60th anniversary celebration to the memory of my dad, Frank Ring, who passed away in 2008," he said. "My father was a Type 1 diabetic and a major contributor to Joslin Diabetes Center who was a member of their President's Circle. In fact, my parents will both be honored, in memoriam, for

their support at the 29th annual celebration to benefit Joslin Diabetes Center, at Symphony Hall on Friday, May 9, 2014," he continued.

The success of Applied Plastics Co., Inc. is evident today as the company is in the process of constructing an additional 20,000 sq. ft. facility in order to remain highly responsive to their customers while accommodating growth.

Premiere for futuristic aircraft – Bayer materials on board

Curtain up for a visionary project: The decisive second Solar Impulse aircraft has now been completed. The plane, which is to be the first to travel around the world entirely without fuel in 2015, was unveiled recently in Payerne, Switzerland. On board are numerous innovative products and solutions from Bayer MaterialScience that make the plane especially lightweight and energy efficient, including a novel and extremely efficient insulating material for the cockpit.

Outside the cockpit, rigid polyurethane foam from Bayer MaterialScience is used to insulate the batteries. The company also provides the raw materials for the silvery coating covering large portions of the aircraft and the adhesives that hold the textile fabric in place underneath the wings.

Pricing Updates

Arkema Coating Resins Announces Price Increase for Solventborne Polyester And Alkyd Resins Sold in North America

Effective April 15, 2014 or as contracts allow, Arkema Coating Resins increased pricing on solventborne polyesters and alkyds sold in North America.

Chempol polyester and alkyd resins increased by \$0.05 per pound; Synaqua alkyd dispersions increased by \$0.04 per pound.

The company says this action is necessary due to escalation in the cost of key raw materials.

People

Steve Romer, Senior Systems Application Engineer

EXEL North America, Inc. – manufacturers of Kremlin Rexson and SAMES brand products located in Plymouth, Michigan would like to announce that Steve Romer, Senior Systems Applications Engineer is re-joining our organization. He will be working as a member of our General Industrial Systems Sales team.

Romer has over 44 years of industrial finishing

experience in the design, development and practical application of automated industrial painting systems. He provides expertise in coatings application, system design, application tools and process optimization. Steve's long career includes almost 30 years with Kremlin and EXEL North America and he is very happy to return to our organization.

Romer's main focus will be the design and sales of industrial paint application systems to the general industry marketplace. His specialties include automated drum, pail and tank finishing systems, door painting systems, hydraulic cylinder finishing systems and other general application systems. He will also be working with our General Industrial sales team and our distribution network to lend his experience and passion for Kremlin Rexson and EXEL products and solutions.

Miltec UV Corporation Appoints New Global Sales and Marketing Director

Miltec UV Corporation announced in January that Frederick Beu joined the company to further grow the regional, national and international representatives and distributors for the company. Fred comes to the company with a wealth of experience in growing market segments for other companies, having spent the last seven years at Dynasplint, developing new marketing strategies.

Bob Blandford, President of Miltec said, "Fred will be responsible for all Sales throughout the world for all Miltec products. As we begin the expansion of our Sales staff both here in the USA and in other countries, Fred will work very diligently in hiring these Sales Representatives and Distributors as well as managing them. He will also establish new Sales Strategies and Programs to allow us to target key accounts and markets with the ultimate goal of growing our sales."

With his joining the company, CEO Marilyn Blandford, added, "With our new innovations, particularly in the research and development of our lithium ion battery project, and customer demands led us to look for an addition to our team that would fit with our goals of innovation and quality customer service."

IGM Resins Enhances Commercial Team

IGM Resins, Inc. has expanded its commercial team with coatings industry veteran talent to support its continuing growth. Patrick Maloney joined the Company as Vice President, North America and Andrew Chambers was promoted to Vice President, EMEA. Both report to Chief Executive Officer Edward Frindt. IGM also increased assistance to customers in North America, adding Regional

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- For Wood, Metal, and more
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FINISHING BRANDS.COM



Andrew Chambers



Patrick Maloney



Robert Linders



Tony Franklin

Sales Managers Tony Franklin and Robert Linders.

Maloney is responsible for all commercial activities in North America, including supply chain, sales and technical service. In addition, he will develop and implement IGM's global acrylates business strategy. Maloney brings 25 years of coatings, adhesives, resins and emulsions experience to IGM. He was Vice President and General Manager, Flexible Packaging for Watson Standard, a specialty coatings, adhesives and custom formulated solutions supplier to the global rigid and flexible packaging industries. He began his career in R&D, and served in technical, sales, marketing and business management positions for Pratt & Lambert, Valspar, Cook Composites and Polymers, and PolyOne. He earned a B.S. degree in Chemistry from Canisius College and an MBA from Saint Bonaventure University.

Chambers is responsible for commercial activities in Europe, Middle East and Africa. He joined IGM in 2004 as Business Manager, Europe and has been instrumental in the company's growth, including establishing IGM UK and IGM Inc. USA. His 36-year career in the UK, the Netherlands and South Africa includes global business, marketing and product management positions in chemicals and coatings companies such as ICI Chemicals and Polymers, Hickson International, and Lambson Group. Chambers holds a Business Degree from Manchester Metropolitan University and an Institute of Purchasing & Supply Professional Diploma from St. Helens Business Management College.

Franklin is East Coast Regional Sales Manager. His responsibilities include coordinating activities of IGM's technical service and R&D resources to meet customers' needs, as well as new business development. His background includes 17 years in the coatings and adhesives industry in technical, sales, distribution and business development positions for companies such as International Paper, Rohm and Haas/Dow Chemical, and UCB Chemicals/Cytec. Franklin has experience with a wide variety of resin systems and substrates involved in traditional and energy curable liquid and powder coatings for packaging, paper, flooring, automotive and industrial applications, as well as inks for litho, flexo and screen printing. He earned a B.S. degree in Chemistry from Hampton University.

Linders is Midwest Regional Sales Manager. He is a career professional with 35 years in the UV space. His early career included technical positions of increasing responsibility and scope, and gained him recognition for expertise in UV curable coatings for the food and beverage rigid packaging market. During the past 10 years, he served in a

commercial development role at Watson Standard, where he managed regional, national and multi-national accounts. He holds a B.S. degree in Chemistry/Biology from the University of Illinois at Urbana-Champaign.

Calendar of Industry Events 2014

June 3, 2014: OPA Golf Tournament, Caledon Woods Golf Club, Bolton, ON.
jmoore@vlomas.com

June 9-11, 2014: SUR/FIN 2014, Cleveland Convention Center, Cleveland, OH,
www.nasfsurfin.com

June 25, 2014: OPCA GOLF CLASSIC 2014, Angus Glen Golf Club, Markham, ON,
susan.fitzpatrick@opcatrusted.ca

September 2, 2014: Oil & Colour Chemists Organization of Ontario, (OCCO) 27th Annual Golf Tournament, Nobleton Lakes Golf & Country Club, Nobleton, ON, shotgun tee-off 12 noon. Please register by Aug. 1, 2014. bclatworthy@dominioncolour.com

September 16-18, 2014: Powder Coating Show, Indiana Convention Center & Lucas Oil Stadium, www.PowderCoatingShow.com

September 26-27, 2014: Canada Woodworking East, co-located with InterSaw. The international aw milling expo, Olympic Stadium, Montreal, QC.
www.CanadaWoodworkingEast.ca, www.InterSawScie.ca

October 5-7, 2014: Canadian Paint and Coatings Association Annual Conference & AGM 2014, Quebec City, QC. www.cdnpaint.com/cpca-conference-2014

November 11-13, 2014: FABTECH 2014, Georgia World Congress Center, Atlanta, GA,
www.fabtechexpo.com

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Taking Care of Business

CPCA Submits Comments Seeking Extension to the Stop-Manufacturing VOC Deadline for Recycled Coatings

CPCA was recently made aware of an important issue with respect to the Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations and the stop-manufacturing deadline for the recycled coatings category to take effect on September 9, 2014. Continuing with the industry's commitment to Extended Producer Responsibility and CPCA members' commitment to recycling, CPCA made a formal submission to Environment Canada requesting an extension for Canadian recyclers to ensure that all alkyd surpluses with high VOC content still on the market, or purchased by consumers in recent years, can be recycled and reformulated for several more years. This will ensure that these products do not end up in landfills, exported or incinerated. CPCA has requested an extension of a minimum of four years, renewable for at least another four-year period thereafter. Consumers are not aware of the VOC regulations and typically take 10-15 years to return their leftover paint and containers to the various Canadian product stewardship programs. It will be impossible for recyclers to comply with the new VOC limit of 350 g/L when attempting to use the old "legacy" alkyds containing high VOC content beyond the deadline of September 2014. As a result they will be forced to send significant alkyd stocks to landfills or for incineration. This will not be in the spirit of effective and sustainable management, which has been strongly promoted by

provincial product stewardship programs and the federal government generally. It would clearly not be the highest and best use with respect to managing existing resources and their various constituents, such as heavy metals like lead, often found in leftover alkyd products. Additionally, alkyd surpluses for energy reuse are not permitted in all Canadian provinces and thus not a valid option for some alkyd recyclers. Based on recent experience recyclers claim that at least 16-20 percent of their volume of leftover paint are still alkyds and on average, the stocks still being received are 10 years old.

CPCA Files Two Submissions on Recent Government Proposals for Non-Challenge Substances BDTP and Ethylbenzene

For BDTP, the draft risk assessment and risk management scope documents were published in the Canada Gazette Part I on January 25, 2014. This substance was proposed for addition to Schedule I of the Canadian Environmental Protection Act (CEPA) and as a candidate for virtual elimination in three major sectors implicated: paint and coatings, plastics, and automotive. There were data gaps identified in the risk management scope document and specific questions posed to industry. CPCA assisted Environment Canada and Health Canada by gathering answers to their questions from the seven international paint manufacturing members still using BDTP, a UV-absorber used in certain paint products sold in Canada in 2013. CPCA obtained an extension from

the government for this effort in order to have sufficient time to fully address relevant issues with members, which lead to a consensus on specific recommendations for Canadian paint industry in advance of the final risk assessment report and proposed risk management approach that will be published in January 2015. A copy of the submission on the Members Only section: www.canpaint.com.

On February 8, 2014, Environment Canada and Health Canada published their draft risk assessment report and proposed risk management scope document for the non-challenge substance ethylbenzene, targeting its use in four Canadian categories of consumer interior and exterior alkyd paint products. CPCA has asked members to review their remaining product offerings in these specific markets and to investigate if the proposal to limit the concentration of Ethylbenzene at a concentration of one per cent would have any negative repercussions on their business. After gathering members' comments, CPCA sent a letter to the government on April 7, 2014, which outlined the paint industry's concerns and requested specific recommendations with respect to the proposed risk management instrument. Copy of the letter on the Members Only section: www.canpaint.com.

Baseline Survey on DEGME, Ethylbenzene and MEKO Launched on April 15

A non-mandatory questionnaire sent to CPCA members targets consumer paint products containing three substances (Batch 7 MEKO or 2-butanone oxime,

Batch 3 DEGME and Non-Challenge Substance Ethylbenzene) and these surveys should be answered by all paint manufacturers and brand owners selling paint in Canada by May 30, 2014. CPCA members have provided valuable feedback in this process. If you are a paint manufacturer or brand owner and have not received the survey forms, please do not hesitate to contact Health Canada or ask CPCA directly for a copy of the questionnaire. CPCA members can download the questionnaire in the Members Only section of the CPCA website. CPCA recently sent out a bulletin informing all members, and some non-members, about the survey and encouraged everyone to participate. The compiled information will help the government derive baseline data in advance of the Codes of Practice being implemented for two of the substances (MEKO in 2014 and DEGME at the end of 2014 or early in 2015). For ethylbenzene, four categories are targeted: concrete floor sealers, stains, lacquers and varnishes and the government is seeking more information to inform the risk assessment and risk management process for this substance.

CPCA to File Comments on Potential Amendments to Environmental Emergency Regulations

Last April, Environment Canada conducted public consultations regarding the potential amendments to the Environmental Emergency Regulations (E2 Regulations). The key elements of the proposed amendments include the addition of 49 substances to Schedule 1 of the E2 Regulations and the amendment of thresholds for three existing substances, including 20 substances from the Chemicals Management Plan (CMP) Challenge and 16 substances from the CMP Petroleum Substances Stream Approach. The regulatory requirements regarding E2 plans and measures to notify the public will be formally published and Schedule 1 of the E2 Regulations will be modified to consolidate all three parts under a single list. CPCA filed comments on behalf of its members on April 14, 2014 focusing on several important issues. The main issue was the very low thresholds (mostly 0.22t) applicable for acid/bases and substances. This is at the drum level, meaning that many more substances will be subject to E2 preparation, planning and reporting, while many of the E2 elements are already addressed by ISO 14001 or other environmental management systems. For the chemicals listed at 0.22 tonnes (e.g. one drum), the quantity would be interpreted as > 1 drum if the thresholds were

Value-Added Membership

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

Globally Harmonized System for Labeling

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

Low-level VOC Emissions

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

Chemicals Management

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

Product Stewardship and Sustainability

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

Top 3 Reasons to Join

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

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



www.canpaint.com/membership

listed at 0.25 tonnes. Our members believe that these very low thresholds are excessive since they will force companies to manage low or negligible risks. A copy is available on the Members Only section: www.canpaint.com.

Summary of the Phthalates Workshop Held March 26, 2014

The phthalates workshop held on March 26 was highly technical and focused on one endpoint: male reproductive development disorder. The government risk assessment specialists delivered a technical presentation on validating read-across data for this grouping of 28 phthalates, but they still have a lot of work to do before issuing a draft Risk Assessment report. There was no discussion at all on the proposed risk management scope. The government received 128 submissions in response to the Section 71 mandatory survey in 2012 and these submissions continue to be analyzed. There are still significant data gaps with respect to composition/properties, concentration, monitoring, and migration rates of these substances. The government must still proceed with 'read-across' for 14 individual assessments and for several endpoints (e.g. male reproductive system, cancer, liver/kidney/thyroid effects). Four phthalates will be used in the government's analytical process related to "cumulative effects." In this case, they not only have to identify relevant scenarios and derive estimates of potential exposure for the general population, but also exposure scenarios that are likely to occur simultaneously. The cumulative effects approach in risk assessment analysis is raising interest in the entire scientific community, especially in Australia, the U.S. and Europe where similar works have been published about phthalates.

Paint and Coatings Working Group Meeting on May 29, 2014

In concert with Environment Canada and Health Canada CPCA agreed to postpone the Paint and Coatings Working Group meeting to May 29, 2014. The Government expects to deliver important news at that time for the paint industry and to provide updates related to the ongoing issues being addressed by the Association.

Final Deadline Approaching for Environment Canada's Socio-Economic Survey on Certain Products Containing VOCs

The extended deadline for the Environment Canada survey on Certain Products Regulations Containing VOCs is May 19, 2014. CPCA encouraged all members targeted by this initiative to respond to the survey.

GHS Update: CPCA Seeks Solutions for GHS-Labeled Products Shipped to Canada Prior to June 1, 2015

On April 1, 2014, CPCA surveyed all Health, Safety and Environment Commit-

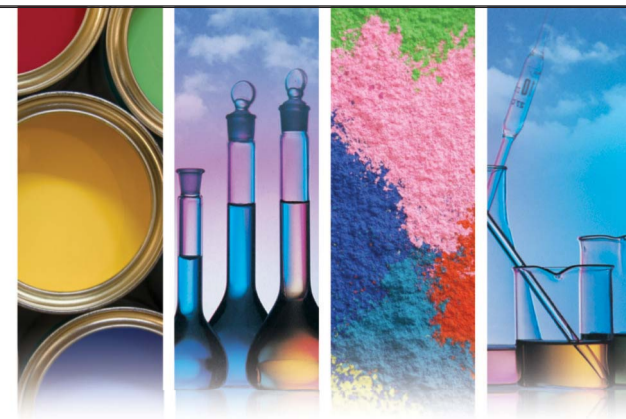
tee members based in the United States to determine if companies would agree to proceeding with dual labeling of their products shipped to Canada over the next 13 months (WHMIS in addition to OSHA labels or WHMIS over GHS labels). Member companies were asked what their preferred interim solution was. Companies that have already commenced with dual labeling have encountered several complications such as, no room for English and French information on the label, some products labeled with the two systems will contain conflicting hazard information and others simply cannot be co-labeled, etc. All companies commented that dual labeling is not a desirable option and, in fact, could be actually more of a burden with all of the special management, tracking and inventory management required. They noted that they would prefer early acceptance of US GHS labels in Canada in the first half of 2015. Thanks to all Canadian and U.S. member representatives who responded to the survey. Several members said that they currently have to ensure that all products entering the marketplace, in compliance with OSHA, are re-labeled before the end of 2014. The final publication of the new Health Products Regulations has to be finalized well before the end of 2014, along with an interim solution for Canada to address the first half of 2015. It is not yet clear what Canada will do in advance of the final deadline of June 2015 to ensure businesses are not negatively impacted by the lack of harmonization of the new labeling standard.

Final Regulations Amending the 2-Butoxyethanol Regulations

The regulations were published in the Canada Gazette, Part II, on December 27, 2006. Following this publication, the Standing Joint Committee for the Scrutiny of Regulations recommended that Environment Canada address several concerns with respect to the clarity and consistency of the English and French versions of the Regulations and addressed key changes such as:

- To emphasize that manufacturer's written instructions must not result in a dilution of the product to a concentration which is greater than the limit set out in the regulations.
- To request the civic address of the laboratory used to determine the concentration of 2-BE in consumer products.
- Footnote 1 of Schedule 1 exempts internal engine cleaners. Internal engine cleaning is a relatively specialized maintenance procedure that is conducted either outdoors or in maintenance garages.

Gary LeRoux is President of the Canadian Paint and Coatings Association based in Ottawa, ON. www.canpaint.com



Formulation Performance and Problem Solving



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As a result, you will find that A.S. Paterson is a reliable and responsible chemical distribution company who firmly stands behind all of the products we represent.

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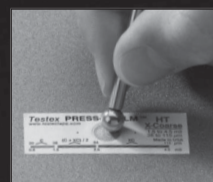
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Continued from front cover

A growing appreciation by researchers that these Microconstituents (MC) can adversely affect the fauna in receiving streams and by extension the expectation that they may cause negative health affects in humans drinking water from receiving streams that receive these M.C.s upstream.

A change in the perception of wastewater treatment plants as sources of pollution discharging to our receiving streams to a new paradigm acknowledging that any waste – exotic or not - is tied to its source. If you generate it, you own it. And it will be identified in the analytical fingerprint unique to its source.

Where SS and BOD serve as gross measurement parameters for how a wastewater plant is performing in reducing these “characteristics”, there is clear-

ly a failure of the activated sludge process in wastewater plants to breakdown and assimilate all exotic organics into new cellular material. New techniques are being developed to address their removal.

For anyone using compounds that may fall into this area of concern – unreacted hazardous organics discharging into the natural environment – in time your waste water effluent stream discharged to municipal sewer will be measured for these items through more contaminant-specific municipal sewer use bylaws. For those of us old enough to remember checking for metals levels from plating shops way back in the 1970’s this is a major expansion in terms of both potential contaminants to be measured but also at levels orders of magnitude much lower than investigated for metals from the 1970’s to now. Let’s examine the three suggested assertions above.



INJURY TO RECEIVING STREAM FAUNA

In a 2011 published research paper by Ings, Servos and Vijayan (Department of Biology, University of Waterloo) entitled “Hepatic Transcriptomics and Protein Expression in Rainbow Trout Exposed to Municipal Wastewater Effluent” the authors address the effects of a municipal wastewater tertiary effluent on a caged fish population while identifying the municipal wastewater treatment plants as “... one of the largest point sources of contamination ...”.

In their discussion of the study’s results the author’s state that “... our results highlight disruptions of multiple endocrine pathways not previously associated with MWWs (Municipal Waste Water Effluent) exposure in fish. ...” (referring to the tertiary effluent). But clearly their research focus was on

endocrine disrupters as specific agents of harm rather than simply indicating the ubiquitous regulatory BOD parameter - a far more generic measure.

SOURCE OF CONTAMINANT

Where do contaminants come from? This may seem an unnecessary question. And yet, once an isolated waste stream – domestic, industrial, institutional or commercial – enters the general wastewater collection system it too often becomes an out of sight, out of mind phenomenon. Even if specific compounds such as an illegal drug, a pharmaceutical, or an organic exotic often reported on in the press (such as bisphenol A) are detected in a collection system flow, the original source may not be readily apparent. Once any one waste stream combines with all the wastes arriving at a municipal WRRE, identifying any one source at that time

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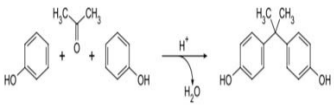
John Seldon, B.Sc., M.A., C.E.T.
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Bisphenol A (BPA) carbon-based synthetic compound
(CH₃)₂C(C₆H₄OH)₂ (Wikipedia)



becomes even more problematic at best.

However, much as metals were (and are) in time traced back to their sources, so exotic organics will be as well. With increasing analytical sophistication - identification of specific organics and at ever lower concentrations - locating upstream sources can be found. Not unlike the increasing numbers of closed circuit televisions daily monitoring our public lives, the sources of these contaminants can and will be found. As Ms. Pelley quotes Ms. Avrai, an environmental engineer with the International Joint Commission in Windsor, Ontario in her article referenced earlier "... People need to understand that treatment plants are not the source of these compounds; we the consumers are the source". It is 2014 and we still need to remind people and industry that WRRFs are in place to clean up our wastes. When those wastes pass through our WRRFs without being broken down and can be shown to be harmful to consumers, the public demand for bringing this to an end will be heard.

DIFFICULT WASTES – SOPHISTICATED RESPONSES

Research and Development (R&D) can help to provide the technological means for breaking down exotic contaminants. Considering the number of compounds reaches into the thousands and not all are understood as to their susceptibility for breakdown across an activated sludge system, the amount of R&D is substantial along with the time to get the work completed and its associated cost. However, Pelley does point out some of the R&D work currently underway:

Studying the effectiveness of Conventional Activated Sludge systems to remove specific MCs – a good starting point.

Research into the effectiveness Biological Nutrient Removal (BNR) systems (as opposed to chemical treatment for nutrient removal) to better breakdown MCs.

Investigating bacteria that may be more effective in reducing MCs.

The use of Ultraviolet Radiation (with hydrogen peroxide), ozonation and phytoremediation (via wetlands) are also being investigated to degrade MCs.

So, a good deal of research is being undertaken but considerably more is needed. There is of course an approach that can be done that lacks a need for R&D – the refusal of customers to purchase any product that may release an MC



into the natural environment. A variation on this approach is an insistence by regulatory authorities for those producing products which may release MCs into the environment to find substitutes that will not harm our receiving streams or the humans that rely on safe water supplies.

SUMMARY

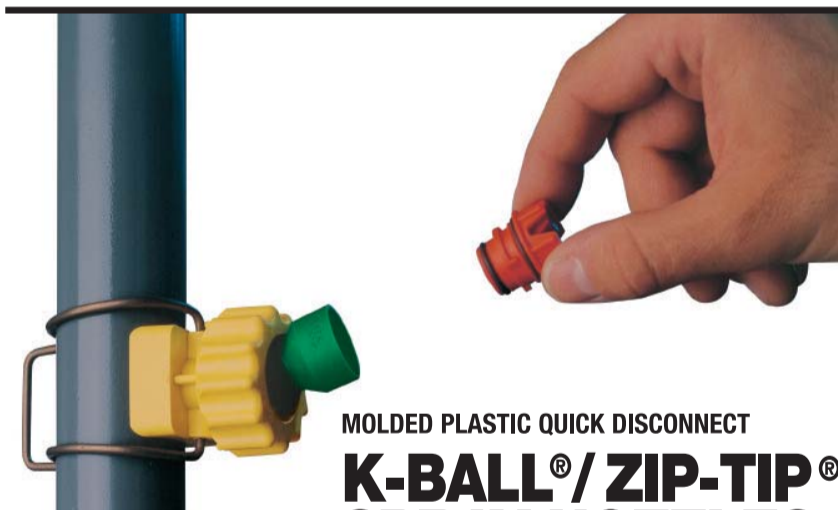
Wastewater constituents are tied to the person or agency that discharges them to the natural environment – regardless of the fact that they may be disposed of by a municipal wastewater collection system. Microconstituents are increasingly being investigated for their potential harm to the environment with an obvious collateral concern for their compromising a public water supply downstream of their discharge location. Conventional wastewater treatment systems may not degrade many of these compounds which number in the

tens of thousands. As long as MCs escape being destroyed by WRRF treatment, in spite of some promising R&D to improve process effectiveness, our water supplies may be jeopardized and therefore our personal health.

In the end, ownership of MCs rests with those who would release them into the environment. If you use compounds, which fit the description of an MC, be certain to investigate and understand how any quantities wasted to municipal treatment fare in the plant's process. If they are not degraded before passing into a receiving stream – a water supply – act accordingly.

John Seldon, is a Wastewater Contractor, Public Speaker and owner of Temporary Operations & Maintenance Inc. Port Burwell, Ontario.

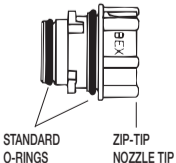
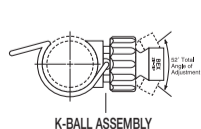
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Nickel Plating

electro, alloy and chemical

Nickel plating is used in many forms such as electroplating, alloy plating and deposited from a solution by chemical reduction and is popular due to its appearance and corrosion resistant properties. The nickel plating process is used extensively for decorative, engineering and electroforming purposes because the appearance and other properties of electrodeposited nickel can be varied over wide ranges by controlling the composition and the operating parameters of the plating solution. Decorative applications account for about 80 per cent of the nickel consumed in plating; 20 per cent is consumed for engineering and electroforming purposes.



ELECTROPLATING AND ELECTROFORMING

Electroplating was one of the early applications of nickel and it remains an important use today. It provides corrosion and wear resistance to the underlying substrate. In addition, it can also provide a smooth basis for a top coating of another decorative material, e.g. chromium and gold.

The properties of the coating depend on the composition of the plating bath and the deposition conditions. Electroplating of nickel can also be used to build up a coating on a removable former (or mandrel). Called electroforming, this process is capable of reproducing extremely fine detail which can be used in plastic moulding operations e.g. for DVD pressing.

Actual components can also be produced, e.g. rotary printing screens. Nickel electroforming is electrodeposition applied to the manufacture of nickel products of various kinds and differs from electroplating in one major respect. In electroplating, the coating is metallurgically bonded to the substrate and is an integral part of the surface. In electroforming, nickel is deposited onto a mandrel or mold non-adherently so that the nickel can be separated from the mandrel when it is removed from the plating solution. Electroforming applications include the fabrication of moulds and dies, mesh and other products that are indispensable to operations in the textile, aerospace, communication, electronics, automotive, photocopying and entertainment industries.

ALLOY PLATING WITH NICKEL

Nickel alloys electroplated for engineering applications include nickel-iron, Nickel-cobalt, nickel-manganese and the popular zinc-nickel. There is growing use of nickel-zinc coatings to replace cadmium coatings in the aerospace industry. Most recently, a zinc-nickel system has been approved by an automobile manufacturer.

ENTHONE PERMA SHIELD 1000 ZINC-NICKEL SYSTEM APPROVED BY GENERAL MOTORS

Enthone is proud to announce the approval of the company's Perma SHIELD 1000 zinc-nickel system by General Motors to meet the GMW4700 Zinc Nickel Type B requirement. The approval was granted for the following processes:

- ZINCROLYTE KIC-NI ammonia-free, acid zinc-nickel;
- PERMA PASS Ultra IV Plus low temperature, transparent passivate, and;
- ENSEAL 1303 sealant specially formulated to meet automotive requirements.

The Perma SHIELD 1000 system provides superior corrosion protection to red rust, while also demonstrating exceptional performance to white corrosion. Applicators have achieved substantial productivity gains as a result of dramatically reduced plating times on high hardness parts due to the system's exceptional initiation and efficiency.

All Perma SHIELD 1000 systems create value throughout the entire supply chain and feature the company's patented ZINCROLYTE acid or alkaline zinc-nickel process production-proven to extend product life, increase yields and reduce rejects. Each process is followed by a PERMA PASS passivate and an optional ENSEAL sealant.


www.enthone.com/brakes.

The engineering applications of nickel plating include those where a fully-bright appearance is not required. Engineering nickel deposits are usually sulfur-free, and matte in appearance. These deposits may be specified to improve corrosion and wear resistance, to salvage or build-up worn or undersized parts, to modify magnetic properties, to prepare surfaces for enameling or for organic coating, to function as diffusion barriers in electronic applications and for other purposes. Engineering applications exist in the chemical, nuclear, telecommunications, consumer electronics and computer industries.

CHEMICAL

Nickel can also be deposited from solu-

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tion by chemical reduction. Depending on the chemical composition of the solution, the deposit contains controlled amounts of phosphorus and can be heat treated to achieve different hardness and magnetic permeability. These electroless nickel plated items are utilized for wear and corrosion resistance as well as in computer hard disc drives.

DECORATIVE PLATING

Modern decorative nickel plating solutions contain organic additives that modify the electrocrystallization process so that mirror-bright, highly-leveled nickel coatings are deposited directly from solution. Prior to the introduction of the “organic” baths, decorative nickel coatings were produced by polishing nickel-plated parts mechanically, a practice that continued from 1870 to about 1945.

MEASUREMENT FOR NICKEL PLATING

There have been innovations when it comes to measurement in nickel plating such as determining the phosphorous content and thickness of electroless nickel coatings using x-ray fluorescence.

Fischer Technology has come up with the capability of non-destructively measuring simultaneously the phosphorous content and thickness in electroless nickel (NiP) coatings using X-ray Fluorescence Instrumentation (XRF). For the first time this capability is realized for measurements in air (vacuum free), regardless of the underlying base material, Al, Fe, Cu or PCB. Fischer’s high performance XRF hardware combined with user-friendly advanced fundamental parameter software allows for fast and accurate results of both coating thickness and phosphorous content at the same time with minimal sample preparation.

Whether you are a supplier of plating chemicals, a plating manufacturer or an end user of NiP plated components, the FISCHERSCOPE® X-RAY XDV-SDD will meet your measurement requirements. A full range of certified and traceable standards are also available from Fischer.

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THE BASIC PROCESS

Nickel plating requires the passage of direct current between two electrodes that are immersed in a conductive, aqueous solution of nickel salts. The flow of direct current causes one of the electrodes (the anode) to dissolve and the other electrode (the cathode) to become covered with nickel. The nickel in solution is present in the form of divalent positively charged ions (Ni²⁺). When current flows, the positive ions react with two electrons (2e⁻) and are converted to metallic nickel (Ni⁰) at the cathode surface. The reverse occurs at the anode where metallic nickel is dissolved to form divalent positively charged ions, which enter the solution. The nickel ions discharged at the cathode are replenished by those formed at the anode.

Pretty ANODIZING



Photo Courtesy: hupemfg.com

Decorative anodizing is anodizing where a decorative finish with a uniform or an esthetically pleasing appearance is the primary characteristic.

The process is called anodizing because the part to be treated forms the anode electrode of an electrical circuit. Anodizing increases corrosion resistance and wear resistance, and provides better adhesion for paint primers and glues than does bare metal. Anodic films can also be used for a number of cosmetic effects, either with thick porous coatings that can absorb dyes or with thin transparent coatings that add interference effects to reflected light.

There are two major categories for the most common aluminum coating anodizing. Type II anodizing, otherwise known as decorative anodizing, is an anodic coating where the primary function is to increase corrosion and scratch resistance while allowing the article to be dyed. The other is Type III anodizing, otherwise known as hard coat, is a very dense and durable coating, typically with three to four times the thickness of Type II, which is used for maximum scratch and wear resistance. Type II anodizing is an abbreviation derived from the military standard Mil-A-8625 Type II category.

Decorative anodic coatings are used to protect and colour aluminum parts for decorative purposes only, where there are no requirements for enhanced durability. Typically, these are thin, highly porous, clear coatings that will easily receive dyes. These coatings can be dyed in a wide

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“Decorative anodic coatings increase the thickness of aluminum’s naturally occurring surface oxide layer.”

spectrum of colours.

Sulfuric acid is the most widely used solution to produce anodized coating. Coatings of moderate thickness 1.8 m to 25 m (0.00007” to 0.001”) are known as Type II (decorative) in North America.

Decorative anodic coatings increase the thickness of aluminum’s naturally occurring surface oxide layer. These natural oxide layers are generally 2 to 3 nanometers thick; Type II anodizing creates oxide layers that range in thickness from 1.8 m (m = micrometer, 1000x the length of a nanometer) to 25 m (0.00007” to 0.001”). When applied properly, decorative anodic coatings are

very regular and uniform across the surface of the treated object.

In decorative anodizing, the oxide layer is created by passing direct current (DC) through an electrolytic solution of diluted sulfuric acid. The aluminum object serves as the positive electrode (or anode, from which the term “anodizing” originates). The electrical current causes the release of hydrogen at the negative electrode (cathode) and oxygen at the surface of the aluminum object, creating a buildup of aluminum oxide. Decorative anodic coatings are formed using high voltage and low current density (<15 amps/ft²).

Type II coatings can be sealed by hydrothermal or precipitation processes, or left unsealed. Choice of seal depends on the object’s final application, dye selection, and how it will be used.

Decorative Type II anodizing is used for applications where corrosion protection is required for low coefficient of friction and colouring the aluminum is desired.

Double anodizing is an innovation in decorative finishes. Similar in appearance to hot-stamp foil, the double anodized finish is more versatile and precise in design and artwork customization. Unlike foil, however, the double anodized finish is very durable and able to withstand the harshest conditions, easing any concerns regarding product compatibility. The double anodized finish is capable of combining matte and bright finishes in two different colours on one surface.

In automotive, decorative sulfuric acid anodizing has been well developed over the last several decades in the aluminum industry. Exterior and interior performance demonstrates that parts processed meet long-term durability requirements. The automotive parts can be fabricated from bare coiled sheet, flat sheet, or extruded shapes. Preanodized coiled sheet may be applicable for selected applications. Alloy selection is governed by finish requirements, forming characteristics, and mechanical properties.

Coloured aluminum foil may be used for the purpose of improving the decorative appearance of parts for production of various coverings, nameplates, and appliques. The service life of decorative coatings is determined by the time of failure of the coloured layer. The problem of increasing the wear resistance of aluminum foil with simultaneous decorative treatment may be successfully solved only with use of anodizing.

Aluminum alloys are anodized to increase corrosion resistance and to allow

dyeing (colouring), improved lubrication, or improved adhesion. However, anodizing does not increase the strength of the aluminum object. The anodic layer is non-conductive.

ORGANIC ACID ANODIZING

Anodizing can produce yellowish integral colours without dyes if it is carried out in weak acids with high voltages, high current densities, and strong refrigeration. Shades of colour are restricted to a range which includes pale yellow, gold, deep bronze, brown, grey, and black. Some advanced variations can produce a white coating with 80 per cent reflectivity. The shade of colour produced is sensitive to variations in the metallurgy of the underlying alloy and cannot be reproduced consistently.

Integral colour anodizing is generally done with organic acids, but the same effect has been produced in laboratory with very dilute sulfuric acid. Integral colour anodizing was originally performed with oxalic acid, but sulfonated aromatic compounds containing oxygen, particularly sulfosalicylic acid, have been more common since the 1960s.

Selected colours can be achieved through anodization of titanium.

Anodizing titanium generates an array of different colours without dyes, for which it is sometimes used in art, costume jewelry, body piercing jewelry and wedding rings. The colour formed is dependent on the thickness of the oxide (which is determined by the anodizing voltage); it is caused by the interference of light reflecting off the oxide surface with light traveling through it and reflecting off the underlying metal surface.

Magnesium is anodized primarily as a primer for paint. A thin (5 m) film is sufficient for this.


Alternatively, metal (usually tin) can be electrolytically deposited in the pores of the anodic coating to provide colours that are more lightfast. Metal dye colours range from pale champagne to black. Bronze shades are commonly used for architectural use.

Alternatively the colour may be produced integral to the film. This is done during the anodizing process using organic acids mixed with the sulfuric electrolyte and a pulsed current.

There are no limits to the colour range for decorative anodizing. The range is nearly infinite, although in practice, the number of dyes is limited as are the dye set up conditions. All colours are available, except white. Both hydrothermal and precipitating seals can be used in Decorative Anodizing. Choice of seal depends on end application.

Decorative anodizing coating thickness can be 2 to 25 m (.0001” to .001”).

Decorative Anodizing rectification normally requires < 15 Amps per square foot current density. This in turn requires a rack that can hold the current density and hold the part securely to prevent arching.



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INDUSTRIAL FINISHING: AUTOMATIC LIQUID PAINT SPRAY GUNS

Continued from front cover

have been carefully designed to handle solvent based and water based products.

EXEL's new ASI 24/40, automatic airless guns have been developed for high production environments, providing fine atomization at medium to high delivery rates. These guns provide excellent finish quality with limited overspray and are rec-



EXEL's ASI 24/40, automatic airless gun.



A25 Flowmax.

ommended for applying harsh viscous and abrasive coatings. Full stainless steel fluid passage; high flow delivery and high cycling rate (opening and closing). These guns have been designed to apply low to semi viscous materials with limited pressure loss. ASI24 can operate to pressures of 3480psi and ASI40 can operate to pressures of 5800psi. No tip seal needed as the spray tip mounted directly on diaphragm without seal. Being small in dimensions can be very easily mounted as retrofits in the existing spray machines. The ball and seat selection along with cartridge makes is very ideal for spraying high solids and UV coatings. The newly designed pre-orifice tips atomizes viscous paints which are unmatched in the industry.

Finishing Brands, manufacturer of Binks industrial finishing equipment, has expanded its MAG line of automatic spray guns with the new Binks MAG II HVLV Automatic Air Assist Airless gun. With an aluminum body, the MAG II is a full size



Binks Mag II from Finishing Brands.

automatic gun that is 30 per cent lighter in weight than the MAG AA and MAG UV

guns. It is ideal for multi-gun finishing lines and designed specifically for superior industrial finishing using a wide variety of coatings including UV.

Binks MAG II HVLV uses Binks unique air assisted airless tips and air caps technology to provide an exceptional finish.

Key highlights include:

- Design Benefits
- Modular integrated design for quick and easy gun replacement; manifold contains fluid and air connections
- Integrated in-line fluid filter — no need to remove gun body when changing filter elements
- Superior transfer efficiency with reduced overspray and lower booth maintenance costs

Tip and Air Cap Features

- Three tip options available:
- Flat tip — for a uniform finish
- Fine finish tip — pre-orifice for best particle distribution
- Twist tip — reduces downtime caused

by tip clogs

- Uses same air cap technology as in Binks Air Assist Airless manual spray guns to provide high-quality finishes
- Capable of spraying a wide variety of coatings, including UV

Engineering Features

- New robust end cap: reinforced with stainless steel plate for longer life
- New spring assembly: spring is retained in cap for easy assembly
- New mounting block screws: larger diameter screws resist shearing and stripping, easier maintenance

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Graco AirPro EFX.

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

Continued on page 32

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The proven reliability and quality of SATA spray guns is also available as pneumatically controlled precision spray guns for automated paint jobs. Versions with low overspray or for robotic systems are available in material saving HVLV or RP technology.

Automatic spray guns are also available as stainless steel version to make them suitable for waterborne paints.

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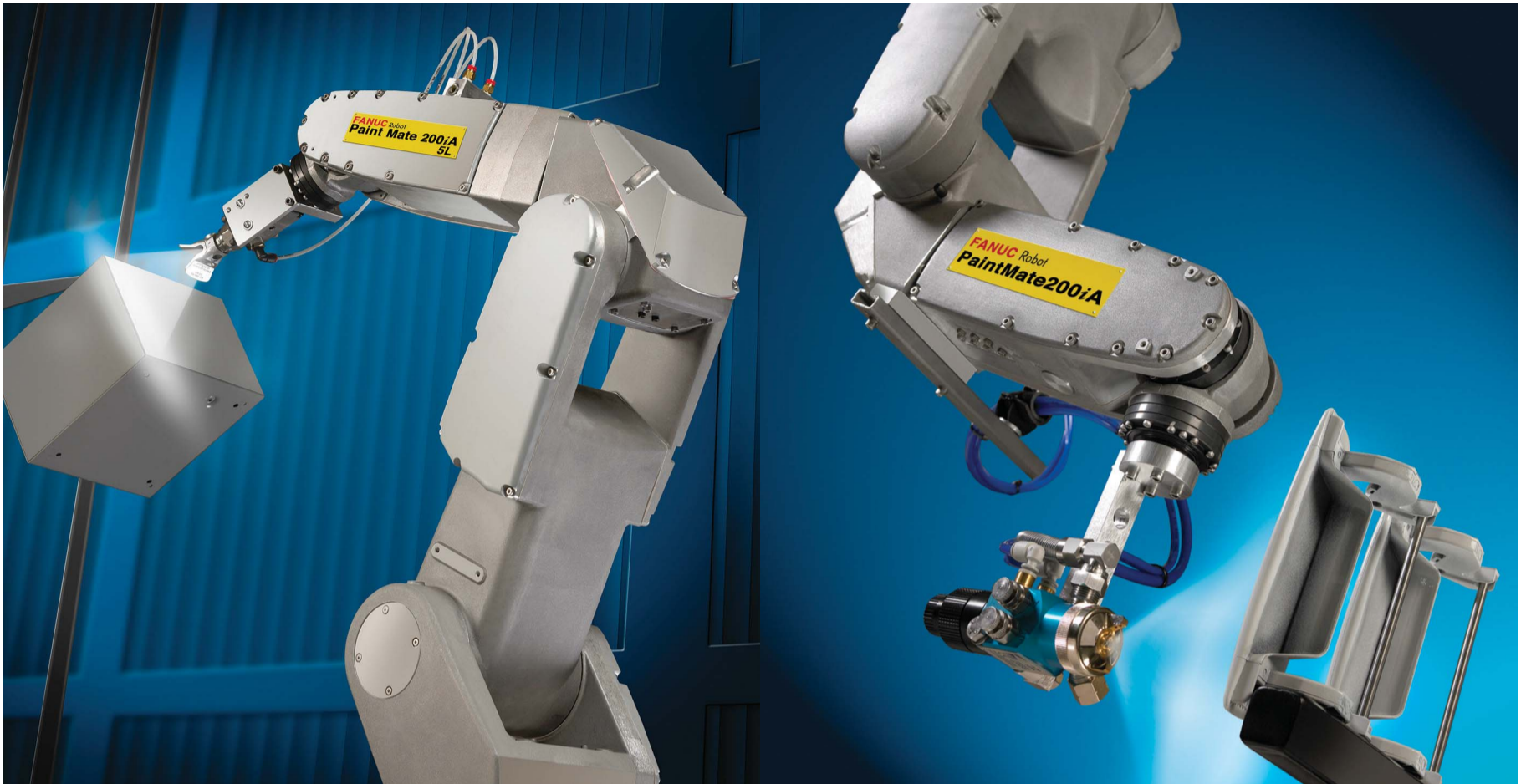
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Consistent CONTROL



Fanuc's PaintMate 200iA.

Although moving to automation in the paint and coating process can be daunting, manufacturers of robots and gun motion equipment are noticing that their customers are experiencing overall cost savings and consistency in outcome when they do make the switch.

Barton Faylor from Fanuc says, "The driving factors for automation remain the same for our large Automotive OEM cus-

tomers, but for the smaller tier and general industrial customer; we're seeing the demand for labour savings as well consistent film build with limited material waste driving their automation needs." He adds, "Utilizing robotic automation for coating provides consistent gun control and material delivery. Coupled with FANUC's innovative software options, manufacturers are seeing significant costs savings in automating their coat-

ing/finishing processes."

One of Fanuc's new paint robots, Paint Mate 200iA/5L, is utilized more for general industrial applications rather than automotive.

The FANUC Paint Mate 200iA intelligent mini paint robot, designed to paint or decorate small parts provides a cost-effective alternative to applications requiring multiple fixed paint guns. The Paint Mate 200iA robot is extremely flexible and easily

adapts to small lot sizes, new styles and other modifications, providing customers an affordable and versatile solution. Slim and lightweight, the Paint Mate 200iA robot can be mounted in a variety of positions, which helps companies challenged with small and narrow workspaces.

"The Paint Mate 200iA can be used for painting small parts or as a material savings alternative to multiple fixed guns," said Barton Faylor, paint product manager, FANUC America.

Paint Mate 200iA Features and Benefits include:

- Light-weight and slim arm design fits in tight work spaces.
 - Paint Mate 200iA offers 704mm reach, and Paint Mate 200iA/5L long-arm model offers an 892mm reach.
 - Purged and pressurized arm is FM and ATEX Class Div. 1 approved; maximizes reliability with FANUC's standard purge module; offers integrated solenoid valves for gun trigger.
 - High-speed operation minimizes robot cycle times.
 - Upright, invert or wall mounting accommodates a wide range of work areas.
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Yaskawa Motoman celebrated National Robotics Week by inviting student groups to take facility tours, speak with automation professionals about future job opportunities and interact with live robotics demonstrations.

Yaskawa Motoman hosted students from local schools and universities, including: Alter High School, Carroll High School, Franklin High School, Dayton Early College Academy, Edison Community College, Mother of Mercy, Sinclair Community College, The Ohio State University and Troy Christian.

National Robotics Week was instituted by Congress as the second full week of April every year. 2014 marks the fifth 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.

“National Robotics Week is one of the highlights of our year at Yaskawa Motoman. It is gratifying to see so many young minds get enthusiastic about robots,” shared Erik Nieves, Technology Director. “These students are further evidence that the greatest generation of robotics engineers and technicians is coming!”



Yaskawa Motoman celebrated National Robotics Week by inviting student groups to take facility tours.

Yaskawa Motoman wants to inspire students to become involved in STEM courses and pursue careers in robotics. Job opportunities in this field continue to grow as more companies implement automation to meet production demands.

Founded in 1989, the Motoman Robotics Division of Yaskawa America, Inc. is a leading robotics company in the Americas. With nearly 300,000 Motoman robots installed globally, Yaskawa provides automation products and solutions for virtually every industry and robotic application.

Flexible, high-performance Motoman paint robots increase finishing quality, consistency and throughput, while dramatically lowering operating costs and decreasing wasted material. Our complete line of paint robots provides versatility and superior performance in standard industrial, automotive and aerospace coating and dispensing applications.

These application-specific paint robots can be used for primer, base coat, finish

coat, clear coat and spray dispensing, using water-based, solvent-based, powder, glaze and glue/adhesive materials. They efficiently coat complex parts of nearly any size and shape, including recesses, curved and contoured surfaces - without runs or sags.

Motoman paint robots can be programmed to apply coating materials to different areas of the part to various film thicknesses. They are available with a variety of hollow, Lemma, three-roll and standard wrists to suit your coating application needs. Paint robots use a special controller with a Factory Mutual (FM) Class 1, Div. 1 intrinsically safe (explosion-proof) rating.

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LIQUID SPRAY Booths and Filtration

From small, bench-style paint booths to multi-stage automated finishing systems, there are spray booths on the market designed to fit all system requirements.

Spray booths provide the ideal paint application conditions with balanced air-flow to minimize overspray. They can be built of 18 gauge galvanized steel panels with heavy-duty steel framework designed to meet or exceed regulation standards. Whatever a customer's finishing needs, booths are designed to be fully integrated into the system. Some features include: recirculated air systems, side-draft, cross-draft or down-draft air flow, multi-level filtration, powered man-lifts, conservative air flow, high efficiency dry filter or water wash filtration, high intensity lighting, paint sludge separation, and more.

There are now portable spray booth technologies with filtration technology built right into the booth that fully filters and recycles industrial contaminated indoor air and returns it safely to the indoor air environment.

Spray booth designers aim to maintain continuity in design and have technology allowing them to visualize the spray booth and other designs before it is constructed. Often photo-realistic renderings are used in design processes, eliminating the need to create costly, time-consuming, physical prototypes.

There is a large variety of pre-engineered paint booths on the market—from small size paint spray booths perfect for small parts to automotive paint booths.

Many spray booth suppliers also offer accessories such as filters and exhaust fans, or they may offer:

- Paint Booths, Spray Booths
- Automotive Prep Stations
- Paint Mixing Rooms
- CTOF Paint Booths
- Spray Booth Filters
- Truck Spray Booths
- Open Face Paint Booths
- Bench-Top Paint Booths
- Large Vehicle Finishing Booths
- Powder Coating Spray Booths

- Aircraft Paint Booths
- Finishing Systems
- Industrial Ovens
- Pre-Treatment Washers
- Parts Washers
- Dust Collection Booths

There is advanced spray booth technology and decades of experience on the market to help create your spray booth finishing environments.

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. Accordion style filters average four times the life of other filters and the downtime for replacement is cut in half. 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, fibre-glass 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.



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Solvent Recycling Saves

Due to the government taking a keen interest in the environment and passing regulations concerning solvent waste that may be harmful, Canada has several manufacturers of solvent recovery equipment offering choices to the finisher.

If an Industrial Finisher is stuck with used solvents and paying to have them disposed of, solvent Recovery Equipment manufacturers and distributors can help by calculating the cost of solvent disposal vs. the cost of solvent recovery and recycling - using their solvent recycling equipment. In most cases, customers can start to recover their costs after a year of using solvent recycling equipment. To reduce the cost of purchasing new solvents, recovery equipment can bring fresh recycled solvents back into the solvent processes – thereby saving money.

Maratek Environmental Inc., based in Bolton, ON, is a world leader in the manufacture of solvent recycling and solvent recovery equipment. With hundreds of companies all around the world using Maratek solvent recycling equipment, the company makes it a point to serve and meet the needs of its customers. They have a model for every application no matter what solvent is used. They have different standard ranges to choose from plus special designs. A long list of options allows units to be equipped to meet your exact requirements.

The choice of unit will depend on a number of important criteria and Maratek will work with the finisher to determine what is needed.

“Things to consider are the type and quantity of solvent to be treated, the type of waste residue preferred (solid, semi-liquid or liquid) and the level of automation required. If you use any type of solvents, you can spend a lot of money dealing with solvent waste,” states the company. “To stay competitive, you’ve got to keep solvent waste costs as low as possible. But to keep regulators happy and customers and investors interested, you’ve got to demonstrate “green” and environmentally friendly initiatives,” Meretek adds.

Maratek Environmental has all the answers to a finisher’s solvent recovery questions.

In 2011, Maratek Environmental Inc. acquired Omega Systems of Montreal, allowing Maratek to expand its product offering to a full suite of recycling equipment products.

Founded in 1980 in Montreal, Canada, Omega provided the broadest range of recycling solutions in the market, with equipment addressing solvent recycling, oil recovery and industrial process water purification systems.

With thousands of units operating throughout the world, Omega has acquired a wealth of experience that has made it a world leader in designing and manufacturing equipment for reducing, recycling and reusing industries’ waste streams. Here is a selection of former Omega customers.

- Pratt & Whitney
- Moody Boom
- Caliber Collision
- Bombardier
- General Cable
- US Steel
- Mitec
- Almexa Aluminum
- Alliance Medical
- GE
- Chem-Rec
- Canadian National Defense
- US DOD
- Textron
- Lawrence Livermore Laboratory
- Hydro Quebec
- Transcontinental Printing
- Walt Disney Corporation

Solvents it has helped recycling include:

Their solvent recycling solutions include: RS-3 and RS-6 (3 and 6 gallons); RS-15 and RS-30 (15 and 30 gallons); RS-I Models; RSP Models; Combo 3-II and Combo 6-II Models and Flex-O-Wash Parts Washer.

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AV Series Solvent & Water Re-Claimer

The AV series has been designed and manufactured to meet the complex needs of modern industry. The skills acquired over years of experience in these fields, have enabled Nova Finishing Products Inc., based in Mississauga, ON, to produce a wide range of products and accessories that ensures a high degree of flexibility and adaptability to every problem inherent to the recovery of a dirty solvent. The maximum productivity is ensured by the removable tank and interchangeable allowing you to perform several cycles of consecutive distillation and collect the dirty solvent directly into the areas of use within the plant.

Solvent Recovery Systems: distill and condense solvents, thinners and cleaners. This process takes waste solvent and turns it back to a reusable state. Solvent Recycling separates the reusable solvent from what was contaminated waste. The distillation process can separate the different solvents, as they all have a different point of evaporation. The solid waste is reduced, and easier to dispose of.

This process allows you to reuse the solvent, thus reducing the disposal cost of the used or contaminated solvents. Solvent

Recyclers are available in a variety of capacities. Recyclers are normally sized to recycle the amount of contaminated solvents that are generated in a day.

The standard sizes range from 5 gallons to 55 gallons and they will recycle up to 95 per cent of the waste solvent.

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By doing on-site solvent recycling a finisher can reduce solvent purchases by as much as 80 per cent.



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Canada is Reaping the Benefits of Paint and Solvent Recycling

The paint and coatings industry in Canada now has an official post-consumer paint-recycling program for both paint and solvents in every province. For industrial products and solvents like thinners and reducers, there are solvent recycling businesses across the country, often operating independently with no formal organization or program to oversee their activities or optimize the management of the products or solvents after Industrial, Commercial and Institutional collection.

According to the Canadian Paint and Coatings Association, (CPCA), the recovery rate for architectural water and solvent-based paint recycling in Canada, in terms of tonnage, averages 25 per cent in metal/plastic containers, 60 per cent recovered paint (latex and solvents) and the rest, 15 per cent, is paint residue that is considered scrap. It should be noted that 20 per cent of the recovered paint quantities (15 per cent 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. Solvent-borne paint recovery from waste diversion programs are diverted for approximately 3.5 per cent of the total quantity recovered from provincial programs. CPCA members represent approximately 90 per cent of the paint recycled in Ontario.

Maratek Environmental Inc., in Bolton, ON, has served industrial manufacturers who produce hazardous chemical waste and solvent waste such as printing, photo-finishing, silver and paint-related manufacturers for over 40 years.

They help their customers meet the ever-tightening environmental compliance legislation, as well as help them reduce costs and save money.

Maratek is a recipient of the Financial Post Environmental Award for Business and the prestigious GATF InterTech Award for the Solvent Saver system.

In 2011, Maratek Environmental acquired Omega Systems of Montreal, allowing Maratek to expand its product offering to a full suite of recycling equipment products.

They provide a complete range of liquid hazardous waste recycling and recovery equipment for liquids, wastewater, solvents, including a range of paint spray



gun cleaners and parts washers.

Meeting today's economic and environmental demands does not have to be expensive.

Maratek Environmental also custom designs recycling equipment for clients needing a unique recycling solution. They work with many different industries to help recycle and reclaim valuable liquid chemical wastes, such as solvent and oil.

Fielding, located in Mississauga, ON, is Canada's leading chemical recycler. They recover solvent waste from the automotive, coatings, printing, and pharmaceutical industries. They are also Canada's largest waste ethylene glycol and waste propylene glycol recyclers. Waste glycols are collected from aviation deicing; waste automotive antifreeze and heat transfer fluid applications. Fielding provides Customers with a cost-effective method to strengthen their commitment to sustainability.

"Recycling rather than disposing of waste chemicals helps to protect the Environment, save our customers money and improve everyone's Triple Bottom Line results," states the company.

Customizing Solutions is the key to Fielding's success. Chemical and waste management needs vary from one customer to another and site to site. Fielding designs custom solutions which may include:

- Custom Blending
- Closed Loop Recycling (Tolling)
- Custom Packaging
- Esterification
- Collaborative Research
- Commercial Trials
- Waste Manifest Exempt options for Ontario based customers

Through a global network of manufacturing partners, Fielding provides a reliable source of chemicals that complement its repurposed products.

They recycle the maximum volume possible from the waste chemicals received. At Fielding, we can clean, dry, separate and custom blend thousands of different waste solvent and glycol combinations. Every waste stream is unique and requires a unique solution to maximize yields and save customers money.

Technologies they have mastered include Distillation, Fractionation, Molecular sieve separation and Membrane separation.

Their unique combination of recycling technologies not only allows them to formulate customized solutions for waste, but to create unique products that meet customers' exact specifications.

Fielding complements your core activities through a network of partners to provide full service sustainable solutions for all of your waste management needs.

Fielding operates a full service solvent and refrigerant lab with over 20 years expertise. Contract analytical services are available, including:

- Moisture analysis – Volumetric and Specific Gravity testing
- Solvent analysis – Gas Chromatography (GC)
- Metals analysis – Inductive Coupled Plasma (ICP)
- Gas Chromatography/Mass Spectroscopy identification
- PCB analysis – ECD – Gas Chromatography (GC-ECD)
- Flash Point -Tagged Closed Cup
- Refrigerant testing to AHRI-700 Specifications

Overall, paint manufacturing companies and product users have recognized the benefits from paint recovery programs and solvent recycling systems. Besides environmental advantages, paint and solvent recycling also offers:

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

Regulatory Harmonization, or Not: A Constant Preoccupation (Part 2)



BY GARY LEROUX

In the last edition of CFCM I provided an update on the ongoing effort by Canada and the United States, under the Regulatory Cooperation Council (RCC) to harmonize regulations given the fact that our two countries represent the largest trading relationship in the world. That piece focused on the new Globally Harmonized System (GHS) for Chemicals in the Workplace, transportation of dangerous goods, product approvals for health and workplace chemicals, and particulate matter and good manufacturing practices. Below we look at other issues that continue to preoccupy members in the paint and coatings industry on both sides of the border, some operating in both countries and others operating in one or the other. In both cases, the need to focus on regulations in both countries is a critical part of doing business.

NANOTECHNOLOGY

The paint and coatings industry recently began a focused effort to establish consistent or emerging treatment for nanotechnology, working through the International Paint and Printing Ink Council (IPPIC), of which CPCA is a longstanding member. CPCA believes it is critical for the Regulatory Cooperation Council (RCC), created by Canada and the United States to align regulations between our two countries, to promote the establishment of a common approach and workable and consistent definitions for nanotechnology matters. This effort could be directed at both the

U.S. and Canadian standards organizations working to ensure the issue is appropriately addressed.

CPCA applauds the past RCC initiative related to nanomaterials in the first Action Plan that led to the development of metrics on current or potential uses; and of a classification scheme and informed discussions surrounding a risk assessment and risk management approach by both governments and industry stakeholders. Part of this cooperation was also meant to establish prioritization of issues such as the identification of nanomaterials. It is understandable that the RCC nanotechnology initiative has progressed well with the full engagement of government and industry stakeholders.

The continuation of RCC initiatives with respect to nanomaterials and nanotechnology will help ensure further alignment and cooperation in the years to come. It will also be critical in the future with respect to many other regulatory initiatives in the international community. The listing of substances in the nano-form per the Toxic Substances Control Act (TSCA) and the New Chemicals Program in the U.S., as well as in the Domestic Substances List (DSL) and the New Domestic Substances List (NDSL) in Canada, remain a challenge with respect to unique identification – a common concern for both countries. The paint and coatings industry is pleased that the RCC is seeking to address this important initiative. CPCA recommended that the RCC share information, and develop joint approaches, on regulatory aspects of nanomaterials,

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including terminology and nomenclature, as well as risk assessment and management. See CPCA's formal submission to the RCC in the Members Only section: www.canpaint.com.

NON-ALIGNMENT OF PMRA LIST WITH THE US EPA LIST

There are several areas wherein non-alignment currently exists for certain products and the coatings industry looks forward to those being addressed in future action plans of the RCC. For example, the paint and coatings industry uses biocides and fungicides in paint formulations in order to ensure adequate conditions for transportation and storage of paint products, as well as preventing biopig growth on applied products. However, there is currently a divergence between the Pest Management Regulatory Agency (PMRA) list of registered products and the U.S. EPA list. In the U.S., biocidal/antimicrobial products are subject to product registration requirements under the EPA's Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). In Canada, biocidal/antimicrobial product registration is ensured by the PMRA (Pest Management Regulatory Agency). Canadian paint manufacturers have informed CPCA that inadequacies between the two lists of registered products cause problems. It must be noted that approval time-

lines established by the PMRA for biocidal products in Canada are extremely long even for products already approved and registered in the U.S. The PMRA approves fewer biocides than in the U.S. and, moreover, the sale price appears to be twice as much in Canada than in the U.S. The considerably larger range of biocides allowed in the U.S. is not only more affordable, but their imports into Canada in finished products are allowed without restriction, hence putting Canadian manufacturing at a real cost disadvantage with respect to U.S. exporters.

DIFFERENCES BETWEEN US EPA AND CANADIAN VOC EXCLUSION LISTS

There have been notable differences between the two VOC exclusion lists in Canada and the USA over the past 10 years. The lists have not been reviewed and updated at the same pace. In Canada, following a long examination process soliciting the requisite approvals within several federal government departments, at various decision levels, led to a recent proposal by Environment Canada to add 13 new compounds to the VOC-exclusion list under Schedule I of CEPA, 1999. Our industry has long sought such an initiative and is fully supportive of these new additions, especially with respect to three compounds widely used in paint and coat-

ings. Due to inconsistencies between the two countries' VOC-exclusion lists, our paint manufacturer members do not have access to the same VOC-content lowering strategies as US formulators. They have therefore been at a disadvantage with respect to compliance with Canadian regulations modeled on US VOC regulations. As well, U.S. producers have experienced difficulties in the stock management of their VOC-compliant products in the U.S. (but not in Canada) that needed to cross the border for sale in Canada.

CPCA recommended further collaboration between the U.S. EPA and Environment Canada (and all related Canadian departments) to ensure that any future intent to modify the VOC-exclusion list be addressed in a more synchronized manner. Also, there needs to be efficient mechanisms put in place to facilitate and accelerate the exchange of information and coordination between all U.S. and Canadian regulatory agencies with respect to future chemicals vis-à-vis the exclusion list. The development of such mechanisms via a streamlined regulatory regime would help exemplify how to prevent such unnecessary regulatory misalignments in a similar regulatory context in future.

CHEMICAL MANAGEMENT OF CMP-DECLARED TOXICS

CPCA believes that there should be a more concerted effort and definitive actions taken with respect to the risk management of certain toxics or suspected toxics being currently addressed in Canada. The U.S. EPA could benefit from employing a non-REACH approach, such as the CMP approach currently underway in Canada and certainly not from other approaches adopted by several states and in the Province of Ontario with respect to toxic reduction hazard-based regulatory programs. The CMP risk-based approach has been lauded by other countries for its science-based, reasoned framework to the benefit of government and industry, as well as the public in general. The U.S. EPA has already identified a list of priority chemicals, which comprise common substances similar to the CMP list of chemicals in commerce, but with a different process and timetable.

There are also ongoing discussions with respect to possible actions by Environment Canada related to thousands of existing substances – or family of substances under the CMP – that are no longer in commerce in Canada, but may be suspected of toxicity in all or specific uses with or without established thresholds. Canadian companies do not want these substances to be removed from the Domestic Substances List (DSL) completely or be subject to New Substances Requirements, as they may indeed be used again in future industrial settings requiring no further restriction, unless they are removed. There must be some coordination with the U.S. EPA with respect to the risk management of the hundreds of DSL

substances, during and beyond their assessment period in Canada, as they will remain freely accessible to U.S. formulators. This must be done to ensure a level playing field and to ensure that companies can operate their businesses in similar fashion on both sides of the border.

It is well known that the Domestic Substances Lists in Canada and the U.S. are very different (with more than 84,000 substances in the TSCA Inventory against approximately 24,000 substances in Canada). Can Canada adopt an ICL process and related deliverables for these CMP-2 and CMP-3 DSL substances that are no longer in commerce? Or, will Canadian companies be subject to massive Significant New Activity (SNAC) processes, which will render the tracking of allowable and non-allowable substances in Canada 'considerably' more difficult for both Canadian and U.S. companies doing business in Canada? This particular issue is very likely the future fate of thousands of domestic substances in Canada if not addressed by the RCC through enhanced technical data sharing and scientific collaboration between the two countries.

Industry fully expects that there will be an increasing number of actions flowing from CMP (Phase 2 and 3 assessments) until 2020 and beyond, such as: codes of practices, guidelines, pollution prevention plans, environmental compliance agreements and significant new activity (SNAC) restrictions. Under such a scenario both governments need to improve or review their conformity assessment approach and intervention processes to ensure better alignment with respect to current approval mechanisms. These issues will definitely result from ongoing government inspections of imported products in the context of an expected increase of different mandatory (multi-substances) and non-mandatory control instruments.

MANAGEMENT OF THIRD COUNTRY IMPORT RISK

The concept of coordination of import programs and information sharing with respect to third country technical requirements might be considered for RCC's next Action Plan. Increasing reliance on third country technical assessments and inspection work could greatly facilitate trade at the 'first point of entry' into Canada or the U.S. This would of course include Mexico as part of NAFTA.

Increased collaboration between regulatory agencies in Canada and the U.S. will help reduce unnecessary duplication of costs for manufacturers, streamline decision-making, and minimize the delays in bringing products to the marketplace. This will result in expanded consumer choices without compromising the safety, efficacy and quality of products in the paint and coatings industry.

Gary LeRoux is President of the Canadian Paint and Coatings Association, based in Ottawa, ON. www.canpaint.com

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PROPOSED WASTE REDUCTION ACT IN ONTARIO: A Better Way Forward Being Sought

BY GARY LEROUX

In June 2013 the Ontario Government introduced a new Waste Reduction Act (WRA) to replace the current Waste Diversion Act (WDA), the intent of which is to increase diversion rates in Ontario that have fallen behind other Canadian jurisdictions and other countries. In 2009 all 10 provinces committed to the concept of Extended Producer Responsibility (EPR) and implemented producer funded recycling programs. They have all done so, albeit with a slight difference in each jurisdiction. Unlike other countries Canada now has a post-consumer paint recycling program in every province and is meeting or exceeding targets in most of them with almost 25 million kilograms of recovered paint in Canada last year. In Ontario the paint industry has exceeded program targets since the inception of the Municipal Household and Special Waste (MHSW) program in 2009 and continues to do so. It should be noted that paint, as one of the designated materials in the program, represents 50 per cent of the MHSW program and producers or paint stewards pay close to \$25 million annually for effective waste reduction. CPCA members represent 91 percent of the stewards in the Ontario paint program. Despite the successes in the paint program in Ontario there are challenges in both the Blue Box and MHSW programs, which the proposed new Act seeks to address. Whether it does so remains to be seen. In fact, it is still unclear if the proposed new Act, Bill 91, will proceed at all.

Since the tabling of Bill 91 at Queen's Park there have been extensive consultations with industry and political debate on the proposed Bill 91 on the floor of the Legislature, now stalled at Second Reading. The Bill has not passed Second Reading due to the extensive concerns raised by industry, primarily through the Coalition for Effective Waste Reduction in Ontario, which is comprised of 16 industry trade associations representing more than 40,000 businesses, one million workers and \$315 billion in revenue. The Bill remains at Second Reading and should it pass this stage it will proceed to an all-party committee of the Legislature for consideration of possible amendments to the Bill before it is sent back to the Legislature for the final Third Reading and approval.

The industry delivered key messages to the Ontario Government in support of effective waste reduction in Ontario, noting that waste reduction must be done in

a manner that does not negatively impact industry in the Province. As such it was suggested that for waste reduction to be successful the proposed Act must ensure producers have the following:

- Autonomy to make decisions and allocate resources with respect to stewardship programs;
- Freedom to leverage competitive market forces for efficient delivery of programs;
- Assurance of a coherent framework of targets and standards to ensure environmental protection, while maintaining a level playing field;
- Constructive relationships with municipal and provincial government bodies that have oversight for monitoring performance;
- Responsibility for how targets are achieved and standards are maintained with respect to obligated steward responsibility;
- Ability set fees for waste reduction and address how standards are to be maintained; and
- A fair, meaningful and transparent consultation process in drafting regulations that flow from the Act.

These important messages continue to be conveyed to government, as the Bill remains open to further consultation. However, should there be an election in Ontario in the coming weeks, Bill 91 will die on the Order Paper and have to be re-introduced in the Legislature if the Liberal Government return. However, should

some other party win the general election and form government it is unclear what will happen to the proposed Waste Reduction Act.

It is important for all interested parties to appreciate the fact that if there is to be effective 'producer' responsibility, the producer must have direct input into the way in which programs are established and executed. Otherwise, the concept of producer responsibility is diminished at the outset. The industry believes that it can achieve more effective waste reduction when the focus is on outcomes and not process. Finally, without appropriate accountability and transparency embedded in new legislation the acrimony of the past will continue and greater waste reduction will not be achieved. In addition to the key messages delivered on the proposed Waste Reduction Act, industry believes that any EPR legislation must subscribe to several key basic principles, namely:

- The need to ensure a level playing field for all producers with respect to the proposed Act;
- Stewardship harmonization is critical to achieve economies of scale, program efficiencies, positive environmental outcomes and convenience for consumers;
- No cross-subsidization between product categories;
- Operational efficiencies must be the goal to ensure competitive markets for services, streamlining of program operations and enhancing overall

governance;

- Collectives (third-party program operators) are critical for producers to meet their legislated responsibility under the proposed Act;
- Service providers must be accountable to regulators and the public in general;
- Industry must have a significant role in setting standards to which they will be held accountable under the Act and acceptance will assure greater waste reduction and less acrimony; and
- Confidential business information must be protected as the foundation of our economy and competition laws respected.

The paint and coatings stewards in Ontario have proven their commitment to waste diversion and recycling in the Province and are committed to meeting established targets as in the past. Producers believe in Extended Producer Responsibility, but also believe that parts of the proposed Waste Reduction Act can be improved to achieve better outcomes. The industry remains hopeful that its recommendations will be fully considered for a more effective waste reduction approach in Ontario in the years to come. CPCA's submission can be viewed on the public section of CPCA's website.

Gary LeRoux is President of the Canadian Paint and Coatings Association, based in Ottawa, ON. www.canpaint.com

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Safe Resins

Resins and polymers are the most important components of a paint or coating. And with government regulations and environmental concerns, waterborne resins are even more important. Demand for them is increasing. Final properties and applications of coatings are dictated by the type of resin, their chemistry, crosslinking, and other factors. Switching from solvent-based coatings to waterborne coatings can reduce costs and volatile organic compound (VOC) emissions.

Waterborne coatings have been around in one form or another for decades but have demonstrated greatly improved performance characteristics in recent years. Some common waterborne resins include acrylics, epoxies, alkyds, and polyurethanes.

NEW INNOVATIONS

Although there are many waterborne resin technology advancements, the following are just a sampling.

Unintended heat transfer from industrial infrastructure is an ongoing challenge to worker safety, equipment maintenance and energy efficiency. With the introduction of MAINCOTE IC Acrylic Resins, Dow is helping to create a new category of liquid insulation coating that provides a solution to this challenge, offering low thermal conductivity in an easy spray application.

“We want to provide paint formulators with a product that will help their industrial customers reduce costs and facilitate worker safety,” said Mary Rose Correa, North America industrial coatings field

marketing manager, Dow Coating Materials. “Waterborne thermal insulation coating formulations containing MAINCOTE IC Acrylic Resins not only have safe touch properties at elevated temperatures, but also maintain target temperatures with notably lower energy usage versus without a coating.”

Traditional insulation materials, such as fiberglass, polyurethane foam and other materials can be used to reduce heat transfer and energy loss, but can be expensive and hard to apply over complex geometries, such as valves and levers. These materials only mask the problem of corrosion under insulation (CUI), instead of solving it, potentially leading to costly maintenance and repairs.

Thermal insulation coatings formulated with MAINCOTE IC Acrylic Resins offer a solution to unintended heat loss and CUI. The resins are designed for use with low thermal conductivity fillers, and coatings formulated with them can replace the thick mechanical insulation that can mask CUI. Fiberglass and other industrial insulation materials typically require a separate moisture barrier or jacketing to keep out water to prevent corrosion issues.

“MAINCOTE IC Acrylic Resins facilitate

replacement of the thick jackets of insulation with thinner, liquid-applied acrylic coatings,” said Leo Procopio, technical service group leader, Dow Coating Materials. “The acrylic backbone offers water barrier protection and thinner film coating facilitates improved detection of corrosion, because it is easier to inspect the metal surfaces.”

Thermal insulation coatings that have been formulated with MAINCOTE IC Acrylic Resins also have the benefit of sprayability. These coatings may be applied with commonly used airless spray equipment, and are particularly beneficial where complex geometries require safe-touch coating applications. Coatings based on MAINCOTE IC Acrylic Resins, and applied at the proper film thickness, have the ability to decrease surface temperature even when the substrate is at a higher temperature, offering safe-touch properties.

Dow also offers:

- FORMASHIELD 12 Acrylic Resin, offering formaldehyde abatement functionality.
- RHOPLEX EZ Clean 1500 Acrylic Resin, providing advanced stain beading for easier stain cleaning.



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- EVOQUE Pre-Composite Polymer Technology, winner of the 2013 U.S. EPA Presidential Green Chemistry Award Challenge.
- ACRY SOL Rheology Modifier, offering no-drip sag resistance, better film build and more applied hiding.
- AVANSE Acrylic Resins, helping waterborne coatings go beyond traditional light-duty applications. It provides formulators with a single resin that can be formulated into corrosion resistant primers, highly durable topcoats and high gloss direct to metal (DTM) finish coats. The technology behind it offers high standards in film gloss, durability, corrosion control, chemical and solvent resistance, and adhesion. One aspect of this technology is the formation of latex pigment composite particles, which give more homogeneous pigment distribution and results in enhanced corrosion resistance.

UNIVAR CANADA DISTRIBUTES DOW RESINS IN CANADA.

Advances in waterborne paint resins help with paint adhesion to metal substrates. Paints based on one-component (1K) waterborne polyurethanes (PUDs) can protect metal surfaces and keep them looking good for an extended period of time. Paints based on 1K PUDs provide outstanding corrosion resistance along with excellent solvent and abrasion resistance. Two-component waterborne polyurethane studies showed that good corrosion resistance may be achieved with the proper choice of co-reactants when these systems are applied directly on treated steel panels.

Allnex has always been in the forefront of developing waterborne coating resins that meet, and in many cases, exceed the performance and application properties of

existing solvent-based resins. Waterborne resin solutions additionally help customers meet ever more stringent environmental compliance requirements while still providing the high level of performance that this demanding market expects.

RESYDROL waterborne alkyd emulsions for high performance decorative, industrial and automotive OEM coatings

MACRYNAL, VIACRYL and UCECRYL waterborne acrylic dispersions for industrial, transportation, roadmarking, packaging and concrete roofing coatings.

BECKOPOX waterborne solid epoxy dispersions for lower-VOC, high-performance anticorrosion coatings.

DUROXYN 1K waterborne cationic epoxy ester resins for low VOC, stain-blocking primers for a variety of substrates.

DAOTAN waterborne polyurethane dispersions for decorative, industrial and automotive primers, basecoats and topcoats.

BECKOCOAT 1K moisture curing polyurethane resins for abrasion- and impact-resistant high-end wood and concrete flooring coatings.

ADDITOL coating additives help formulators optimize paint processing, appearance, application and stability.

ADDITOL additives, based on over 50 years of technology, eliminate defects, improve pigment wetting and reduce foam in coatings.

- CYCAT organic acid catalysts effectively lower curing time and temperature in cross-linked coatings, allowing increased throughput and reduced energy costs.

Momentive's EPI-REZ Epoxy Waterborne Resins and EPIKURE Curing Agents for waterborne systems are a unique portfolio of products that are compatible with each other, and allow the formulator to develop waterborne for-

mulations that in many instances are capable substitutes to formulations containing a high portion of Volatile Organic Compounds.

These combinations can generally be diluted to a desired solids level simply with water addition. Due to their high degree of compatibility with many components, EPI-REZ Waterborne Resins and/or EPIKURE Curing Agents can also be formulated with wetting agents, additives, cosolvents and coupling agents to obtain formulations for fast dry as well as high after cure corrosion resistance and superior adhesion to various substrates.

The benefits of waterborne epoxy systems versus conventional epoxy systems are now quite often the deciding factor in coating selection by decision makers. The following benefits have been the key factors in favor of waterborne epoxy systems:

- Ultra low VOC
- Very low odor
- Non-flammable/non-combustible
- Fast dry and re-coat
- Ease of cleanup (no solvents needed)
- Balanced overall performance properties.

Waterborne coating is a fast-developing technology using water as the means to transfer the coating to the plastic surface and is becoming the new standard, replacing many of its solvent-based counterparts. Today's waterborne chemistries can offer equal to or better cosmetic and physical performance properties than solventborne for many applications.

Waterborne coatings are environmentally "green" and meet aggressive emissions regulations, whereby manufacturers have been able to change from solventborne paint systems in many applications.

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Phone: 1-705-296-3030
Fax: 1-705-296-3031
E-mail: pete.wilkinson@cfcfm.ca

Sandra Anderson, *Editor*
Phone 1-519-442-4071
Fax 1-519-442-1359
E-mail: sandra.anderson@cfcfm.ca

www.cfcfm.ca

NEW Pigment Technologies

Pigments need to do more in a paint or coating than just provide colour. The increasing demands of industrial coatings fuel the need for high-performance pigments that are also compatible with a broad range of coatings formulations.

Industrially, a pigment is any finely divided insoluble black, white or colored solid material, a major function of which is to improve the appearance of or give colour to the medium in which it is to be used.

Pigments are always incorporated by simple physical mixing with the medium, and it is this feature that distinguishes them from dyes. Pigments and dyes are often derived from the same basic building blocks. The fundamental difference between them lies in the fact that dyes are soluble in the media in which they are incorporated and pigments are not.

Given the large number of pigments and dyes available, a classification system is necessary: the Color Index (CI) categorizes each commercially available product, which is given a generic name and number that summarizes its properties, e.g., Pigment Red 254. In addition, where the chemical constitution of a product has been disclosed, it is also allocated a five-figure CI constitution number. Pigments are classified as either organic or inorganic. Organic pigments are based on carbon chains and carbon rings. However, they can also contain metallic (inorganic) elements that help stabilize the properties of the organic component. Inorganic pigments, chemical compounds not based on carbon, are usually metallic salts precipitated from solutions.

Mixing and dispersing pigments into coatings for interior, exterior and industrial applications can present a challenge in achieving just the right attributes.

Luminous metal effect pigments utilize the strengths and advantages of pearlescent pigment technology combined with the highly desired properties of aluminum substrate, which is made possible by a passivation process.

High performance pigments add value to coatings and paints both decoratively and functionally. Effect pigments make products more attractive. They underline their functional benefits visually and distinguish them from the rest of the wide range of goods available. Special additional coating layers give pigments outstanding weather resistance – for lasting brilliance and colour intensity in exterior applications. Functional pigments in paints and coatings also make production processes easier.

A wide range of products in the marketplace includes a unique variety of

colour, luster, glitter and shimmer effects. In automobile coatings, powder coatings, dispersion paints and many other application options, pigments add value to a wide range of products. Customers demand pigments with outstanding weather resistance, especially for automotive paints and facade coatings with lasting brilliance and colour intensity.

Functional pigments with conductive and heat-reflecting properties make production processes easier.

Pigment experts are constantly developing new pigment generations in order to pick up on new trends in colour and effect styling. With innovative effects, they set new trends in paints and coatings.

Introduced this past Fall, with ADDITOL XL 6557, a polymeric, multifunctional universal grinding medium from Allnex, it is possible to formulate cost-effective, weather-resistant, high-concentration solvent-based pigment pastes that enable formulation of a wide range of high-performing, solvent-borne industrial coatings.

Industrial coatings today require increasingly sophisticated colour performance and colour matching. Traditional grinding resins used for the production of pigment pastes have not kept pace with advances in binder and formulation technology, however, and there is a strong need for new pigment paste technology.

ADDITOL XL 6557 is a universal solution to these issues. This polymeric grinding medium is designed to efficiently disperse, stabilize and transport organic and inorganic pigments in non-aqueous industrial paints and coatings, such as coil coatings, marine and heavy duty anti-corrosive paints, agriculture, industrial wood, and other metal coatings.

It is compatible with a wide range of resin types, including acrylics, epoxy esters, ureas, amino resins and nitrocellulose, as well as with many alkyds and polyesters. It is also soluble in a large variety of solvents, with optimum dilution achieved in aromatic solvents, ketones, esters, and ethers.

In addition, the functional modification of the polymer backbone leads to a strong affinity with pigments, enabling the preparation of high concentration colourants with a broader colour palette. Its resin-like structure also enhances the overall performance of paint formulations in terms of adhesion to metal substrates, high hardness, yellowing and weathering resistance, high gloss, good drying properties, good mechani-

cal properties, and high water and corrosion resistance. It can be used for crosslinking of pigment pastes into 2K polyurethane resins or amino crosslinking baking systems or with air-drying alkyds.

Philippe De Micheli, Global Marketing Director Liquid Resins & Additives with Allnex says, “We believe that ADDITOL XL 6557 meets a real need in the marketplace for a pigment paste technology that enables industrial paint manufacturers to develop economic, high performing, tint systems that will colour the major solvent-borne binder resin systems used in the industrial and protective paint segment,” he adds.

Another new technology is PanTINT 73 – pigment dispersions for industrial solvent-based epoxy coatings. They consist of industrial quality organic and inorganic pigments finely milled in Bisphenol A carrier resin.

The pigments chosen for the PanTINT 73 exhibit colour strength, durability, chemical resistance and lightfastness. Most are suitable for interior and exterior applications. The product is manufactured by Pan Technology.

The epoxy carrier resin, along with a proprietary additive package allow for high pigment solids and superior compatibility with a number of epoxy based systems.

The 73 series will be compatible with a wide range of epoxy resin formulations for industrial, maintenance and architectural coating applications.

Clariant, a world leader in specialty chemicals, is incorporating renewable raw materials into Quinacridone pigments produced at its Frankfurt-Hoechst facility in Germany. The achievement makes Clariant the first pigment producer to offer high performance pigments that are based on bio-succinic acid solutions.

In 2014, a significant share of Quinacridone pigment production at the plant will use bio-succinic acid supplied by Myriant, a recognized leader in the development of renewable chemicals. Made from renew-

able raw materials, Myriant's bio-succinic acid is a reliable substitute for fossil-based succinic acid. Myriant's bio-succinic acid can directly substitute fossil-based succinic acid, reducing the environmental footprint of the end products being manufactured without any impact on the production process or pigment quality.

Clariant's decision is in keeping with its global sustainability efforts to use more renewable raw materials, and follows intensive R&D by Clariant and Myriant. Importantly, The company feels it will enable customers serving a wide range of industries to improve the sustainable profile of their products. Clariant's Quinacridone pigments cover all application areas for the pigments industry. The broad portfolio includes high-performance pigments to meet the exacting demands of the automotive, architectural and plastics industries as well as colourants used in printing applications tailored to individual needs.

“Optimizing our own pigment production processes to incorporate renewable raw materials is part of our strategy to help address global challenges and megatrends. We are very excited about what this achievement means both in terms of improving the ecological footprint of our products and in helping our customers to be more sustainable,” comments Marco Ceniso, Senior Vice President and Head of Clariant's Business Unit Pigments.

TiO₂ is a pigment in very high demand. Whether interested in high gloss, hiding power or durability, DuPont offers a wide variety of titanium dioxide pigments (Ti-Pure and Ti-Select™) for even the most demanding coatings applications.

The research and development of pigments for the manufacturing of paint and coatings is on-going. Manufacturers work with their customers to offer solutions.

AkzoNobel Launches New Interpon Align Powder Coatings Technology

AkzoNobel's Powder Coatings business has launched an innovative two-coat, one-bake powder coating system, which offers customers significant productivity and energy efficient improvements that can also result in lower capital investment. Utilizing dry-on-dry coatings technology, Interpon Align delivers superior edge coverage and corrosion performance, while eliminating one full cure cycle. The result is a shortened coating cycle. The new technology can be tailored to meet exact colour and performance requirements, resulting in a wide range of end-use products, including thick and heavy mass metal parts that meet the most demanding OEM specifications for protection and appearance. AkzoNobel is the largest global manufacturer of powder coatings and a world leader in powder coatings technology, operating 31 manufacturing sites. Powder coatings are used on everything from window frames, to pipes and cars, metal furniture, radiators and even wood and plastic. They contain no solvents and have application efficiency levels as high as 99 per cent.

www.akzonobel.com

The Right Chemistry Drives Outstanding Achievements

Alberdingk Boley, Inc. introduces four brand new products: AC 3630, U 9900, U7800 and LUX 220.

AC 3630 is a self-crosslinking emulsion suitable for high performance wood coatings. It has excellent in can clarity and wood warming characteristics. Other features include excellent scratch resistance, outstanding block resistance, fast drying and high chemical and stain resistance. It has good compatibility with polyurethanes and can be easily formulated for industrial furniture (clear and pigmented) coatings.

U 9900 is a solvent free, self-crosslinking polyester based polyurethane dispersion that offers high quality performance for wood applications. It has high surface hardness and very good chemical resistance, and is also for pigmented formulations. It is recommended for two pack wood floor coatings (crosslinked with aziridine) with excellent performance that meets MFMA specifications.

U 7800 is a solvent-free, self-crosslinking polyester based polyurethane dispersion. It is recommended for low VOC (100 g/L) two pack flooring applications. Its features include very good chemical resistance, outstanding abrasion resistance and good wood warming properties.

LUX 220 is a versatile solvent-free, UV curable polyurethane dispersion recommended for high quality wood and PVC coatings, both clears and pigmented. It has outstanding chemical and scratch resistance and a very high film hardness prior to UV cure. Its excellent cure response produces films with high crosslinking densities.

www.alberdingkusa.com

The Next Generation PosiTector PC Powder Checker

DeFelsko, a US manufacturer of coating thickness gages and inspection instruments, is pleased to introduce the next generation of non-contact powder thickness gages. The PosiTector PC Powder Checker measures uncured powder coatings using ultrasonic technology to automatically calculate and display a predicted cured thickness. The PosiTector PC helps to control powder consumption to ensure adequate coverage and reduce waste.

The updated PosiTector PC Powder Checker features a colour LCD, an expanded internal memory and free access to our full suite of PosiSoft Solutions. The gage continually displays/updates basic statistics and automatically generates formatted reports with measurement summaries and charts.

Notably, the PosiTector PC now accepts all PosiTector probes, easily converting from measuring uncured powder to cured dry film thickness, surface profile, and more.

Cost saving Powder Inspection Kits are available, creating a complete solution for measuring powder coatings before and after cure with the same PosiTector gage body and two interchangeable probes.

www.defelsko.com



Phosphorous Content Measurement

Fischer Technology is pleased to announce the capability of non-destructively measuring simultaneously the phosphorous content and thickness in electroless nickel (NiP) coatings using X-ray Fluorescence Instrumentation (XRF). For the first time, this capability is realized for measurements in air (vacuum free), regardless of the underlying base material, AL, Fe, Cu or PCB. Fischer's high performance XRF hardware combined with user-friendly advanced fundamental parameter software allows for fast and accurate results of both coating thickness and phosphorous content at the same time with minimal sample preparation.

www.fischer-technology.com



Heubach New Pigment Products

The first product introduced to the market is HEUCODUR Yellow 2550. It combines multiple outstanding properties in terms of chemical, temperature and weathering resistance with an extremely high tinting strength. It also has a high level of chromaticity and is the first choice in formulating durable colours.

HEUCOPHOS CMP is a new zinc-free addition to Heubach's anticorrosive pigment line. The company is in the process of introducing it to the market. To date the performance exhibited by this product has been achieved only by using zinc-containing anticorrosive. HEUCOPHOS CMP offers non-hazardous metal complex based on phosphate; effective anodic inhibition in solvent and waterborne systems; easy handling; cost-effectiveness and stability in a broad range of resins. HEUCOPHOS CMP provides cost-effective universal applicability which so far has not been seen in non-zinc based anticorrosives, the company reported.

VANADUR 2108 is a new green shade Bismuth Vanadate that is the result of a consequent development work based on the well-established VANADUR product range. VANADUR 2108 shows extraordinarily high tinting strength and very good hiding power combined with high durability, chroma and dispersibility. The high tinting strength opens a new economical dimension for end-users in the formulation of decorative, industrial, powder, coil and automotive coatings. Based on a zinc-free technology it can significantly contribute to ecological-economic balance of paints.

The new HEUCOFIT LR is an innovative pigment preparation line consolidating Heubach's extensive pigment and pigment preparation know-how into ultimate and comprehensive pigment preparations offering outstanding colour solutions for lead chromate replacement.

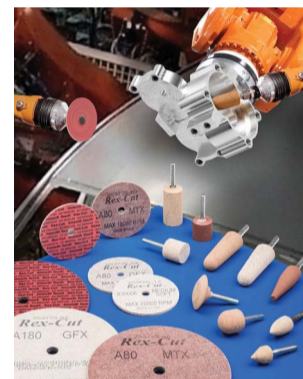
www.heubachcolor.de

Mounted Points & Abrasive Wheels Customized for Robotic Finishing Cells

A full line of cotton fiber mounted points and Type 1 abrasive wheels that are ideal for a wide range of robotic metal finishing and surface preparation applications is available from Rex-Cut Abrasives of Fall River, MA.

Rex-Cut Mounted Points and Type 1 Abrasive Wheels are made from multiple layers of nonwoven cotton fiber that are impregnated with aluminum oxide or silicon carbide abrasives, laminated, and then pressed and bonded together. Ideally suited for use in robotic applications, these cotton fiber abrasive products can be custom fabricated into different shapes, bonds, and grits to achieve specific metal finishing and surface preparation requirements.

www.rexcut.com



Brookfield Introduces New Family of RST Touch Screen Rheometers

Brookfield welcomes three new instruments into its touch screen family of rheometers: the RST-CPS Cone Plate Rheometer, the RST-CC Coaxial Cylinder Rheometer and the RST-SST Soft Solids Tester Rheometer. The new RST Series offers the quickest and most comprehensive capability for making rheological measurements, whether it's single point viscosity for QC or complete flow curve analysis for R&D.

The RST Rheometers are unique because they operate in both controlled stress and controlled rate modes and can perform all of the following tests: viscoelastic modulus, yield stress, viscosity vs. shear rate profile, thixotropy calculation, creep behavior, recovery after flow, and temperature sensitivity. Every RST Rheometer offers the widest torque range available to handle the broadest range of sample materials (500 to 1 million dyne.cm). They provide exceptional versatility with the largest range of shear rates and Din spindle geometries. The sturdy, rugged design of the RST is ideal for use in R&D, working in the QC lab or on the production floor.

All RST models come with the standard option for 21 CFR compliance, including controlled user access and data integrity and security.

www.brookfieldengineering.com/products/rheometers/laboratory.asp

Ashland Rheology Modifiers, New Biocides and ART

Ashland Specialty Ingredients, a commercial unit of Ashland, Inc., introduces three Nuosept preservative grades and Application Reader Technology (ART), a device for quantifying the characteristics of paint application feel. The new Nuosept preservative grades offer a broad spectrum of antimicrobial activity against mold, yeast and bacteria:

- Nuosept 515RX high-performance liquid biocide is a combination of isothiazolines MIT and CMIT. It controls organisms quickly and is effective over the pH range normally seen in architectural coatings formulations. It has no formaldehyde, no organic solvents and does not impart colour or odour.
- Nuosept BMC-412 preservative combines three isothiazoline active ingredients to boost antimicrobial activity in water-based products. It is a unique blend of BIT, MIT and CMIT, which have complementary properties. The result is a broader spectrum of activity than standard BIT/MIT preservatives, with better and faster control.
- Nuosept BT10 preservative allows coatings manufacturers the flexibility of adding biocide to their formulations more precisely.

ART is a new service to help coatings chemists objectively determine paint application feel

according to key parameters. First, ART will help formulators select the best rheology modifier for their coating system. Second, Ashland will use ART to help coatings manufacturers maintain consistency in their formulations by establishing baselines on various characteristics and properties.

www.ashland.com

New Dow Corning EA-2900 Sealant Bonds Quickly to Accelerate Assembly and Improve Reliability of LED Lamps and Luminaires

Dow Corning, a global leader in silicones, silicon-based technology and innovation, introduced new Dow Corning EA-2900 Sealant (white). One of the latest additions to the company's broad and growing portfolio of advanced silicone solutions for LED lamp and luminaire applications, EA-2900 Sealant rapidly forms bonds in as little as 10 minutes. This enables manufacturers to minimize delays in the assembly or handling of parts, and ensures significantly faster production of LED modules, lamps and luminaires.

www.dow.com

Walter Surface Technologies significantly upgrades its QUICK-STEP Line of Surface Finishing and Polishing Products for 2014

Walter Surface Technologies, a global industry leader in surface treatment technologies, announces three new solutions to its QUICK-STEP line of surface finishing and polishing products. The QUICK-STEP FINISHER, QUICK-STEP BLENDEX, and QUICK-STEP FLEX products are the latest additions to the Walter QUICK-STEP family. Featuring patented Velcro support – with a central pin to ensure proper placement and safety – the new time-saving products are designed as the industry standard for finishing ultra-clean stainless steel surfaces in industries such as food prep, nuclear, pharmaceutical, construction and others.

Designed for surface finishing, the new variable-speed QUICK-STEP FINISHER tool is compact, lightweight and ideal for sanding, finishing and polishing tasks.

The newly updated QUICK-STEP BLENDEX surface conditioning discs feature more consistent performance and double the disc life.

The flexible new QUICK-STEP FLEX finishing disc is designed to fit all sanding applications with the advantages of a flap disc.

The new QUICK-STEP FINISHER with QUICK-STEP BLENDEX and QUICK-STEP FLEX can work well on individual tasks or together in a sequence (as a complete kit) to obtain best results in blending and polishing metal surfaces.

www.walter.com

Univar New Products

Tolonate X FLO 100 from Vencorex is a partially bio-based, solvent-free, extremely low viscosity aliphatic isocyanate polymer, based on Hexamethylene Diisocyanate (HDI) that contains 25 per cent renewable material.

It is designed to produce solvent-free polyurethane materials and/or reduce volatile organic compounds (VOC) emissions of polyurethane formulations. When used in combination with other polyisocyanates, it can improve flexibility and control mechanical properties. Tolonate X FLO 100 can be used in high solids two-component polyurethanes and polyureas, solvent-free and waterborne polyurethane systems, the synthesis of polyurethane-based resins and intermediates, cast elastomer and thermoplastic polyurethanes. Tolonate aliphatic polyisocyanates crosslinkers for high-performance polyurethane coatings and adhesives offer exceptional durability and non-yellowing properties upon ageing, with high solids, low VOC options. Based on a unique patented technology, the Easaqua grades are self-emulsifiable polyisocyanates, used as crosslinkers of effective environmentally-friendly waterborne polyurethane alternatives to conventional solvent-based coatings, HDI and IPDI isocyanate monomers, essential building blocks for polyurethane dispersions (PUD).

Disparlon AQH-800 from King Industries is a new hybrid associative/non-associative amide based rheology modifier for waterborne coatings. It is easily incorporated into waterborne systems and provides excellent anti-settling and anti-sagging properties to waterborne coatings due to its high shear thinning rheology. It also has excellent heat age stability, does not impact gloss and its efficiency is independent of co-solvents.

www.univar.com

The New Quick 5-Point Flow Function Test Saves Time and Improves Quality

Brookfield is pleased to announce that the Quick 5-Point Flow Function Test is now integrated into Powder Flow Pro Software, version 1.3 (build 23). This quick new test can be accomplished in about 16 minutes as compared to the Standard 5-Point Flow Function Test, which takes about 25 minutes to complete. This considerable reduction in time allows for more rapid QA/QC checks on production powder batches.

The predecessor to this test was the Quick Standard 2-Point Flow Function Test, which only provided data for the lowest and highest consolidated stress values.

The 5-Point Test provides the operator with five predefined consolidation stress measurements. These five points of data are then used to provide a more accurate representation of the powder's flow characteristics, through a hopper or feeder system. This allows manufacturers to predict poten-



tial flow problems before they occur and make necessary adjustments to improve production and product quality.

www.brookfieldengineering.com

Reichhold Products

Reichhold Inc. presents its newest products:

- BECKOSOL AQ 400 is a short oil alkyd latex used for non-highway road striping that exhibits superior durability over asphalt and concrete surfaces.
- BECKOSOL AQ 510 is an acrylic modified alkyd latex used for multi-purpose applications including architectural primers and enamels as well as blacktop sealers. When formulated into blacktop sealers, BECKOSOL AQ 510 develops and maintains a rich black colour and has much better durability and chemical resistance than traditional coal/tar or asphalt emulsion systems.
- BECKOSOL AQ 522 is a premium modified alkyd latex for wet look sealers with very low VOC and an unprecedented appearance over porous stone like slate and flagstone. This is a second generation product to BECKOSOL AQ 521 which is recommended for use over concrete pavers.
- EPOTUF 38-698 is an acrylic modified 1K waterborne epoxy ester designed for use as a concrete bonding primer to increase adhesion between the concrete and topcoat.
- UROTUF F600-W-40 is a self-crosslinking waterborne urethane designed for garage floor coatings. Performance of these 100 g/L VOC coatings rival higher VOC systems in terms of dry time, hardness, chemical resistance, adhesion and hot tire pick-up resistance.
- UROTUF E300-W-40 is a UV curable waterborne urethane for wood and plastic applications.

www.reichhold.com

RHOPLEX DCR Binders for Deck and Concrete Restoration Coatings Helps Breathe New Life into Weathered Substrates

Dow introduces RHOPLEX Deck and Concrete Restoration (DCR) Binders for restoration coatings, helping reduce the stress associated with repairing, or high cost of replacing, a deck or patio.

RHOPLEX DCR Binders were developed and tested by Dow Coating Materials scientists, exposed to the elements over coated, well-weathered wood and concrete substrates at the Dow Exposure Station in Spring House, Penn. The binders offer outstanding resistance to dirt and staining, and feature excellent flexibility and resistance to cracking. RHOPLEX DCR Binders are manufactured without the use of alkylphenol ethoxylate (APEO) surfactant, and can be formulated to low VOC.

Dow also introduces RHOPLEX EZ Clean 1500 Acrylic Emulsion technology for premium interior flat and satin wall paints, to help deliver less mess and more clean to homes everywhere.

www.dow.com/coatingmaterials

Freeman Technology

Freeman Technology features the FT4 Powder Rheometer that combines dynamic, bulk and shear testing capabilities in a single instrument. It is used to deliver the understanding required for efficient product development and effective process design, operation, troubleshooting and optimisation. Dynamic testing in particular continues to prove especially useful for industrial studies. Inherently sensitive and having high repeatability and reproducibility, dynamic testing can be carried out on consolidated, aerated or even fluidised powder samples to directly assess how a powder responds to air. This is a critical feature for many processes.

The ability to achieve desirable flow characteristics in a powder, whether a finished product or in-process material, is often crucial in reaching product performance goals and/or acceptable manufacturing efficiency.

www.freemantech.co.uk

Michelman Introduces New Ecronova Brand Polymer Binders

Michelman's new Ecronova brand polymer binders represent the basis of many leading paints, coatings and lacquers. The company's line of water-based polymers include styrene acrylics, pure acrylic emulsions, vinyl acetate copolymers and polyurethane dispersions. Solutions are available for low-emission systems, interiors, primers and low-filled systems. Environmentally friendly Ecronova formulations are used in applications ranging from architectural paints and coatings, to masonry and plaster, to wood and floor coatings and lacquers.

Ecrothan 2012 is a solvent free polyurethane/polyacrylic hybrid system that provides very good abrasion and chemical resistance, as well as fast hardness development that produces good water resistance in floor coatings, parquet lacquers and industrial coatings. Ecrlyc KS 447 is an APEO free styrene / acrylic emulsion that produces very good corrosion protection in primer formulations, and shows excellent adhesion on various steel substrates.

www.Michelman.com

TQC Bend Test Conical Mandrel Basic

The TQC Conical Bend Test "Basic" is a simplified version of the TQC Conical Bend Test "Pro". It is a laboratory apparatus to bend coated test panels over a conical shaped mandrel in order to assess the elasticity or resistance of a coating, paint or varnish to cracking, elongation and/or detachment from a metal test panel in accordance with ISO 6860 and ASTM D522.



The conical shape of the bending area allows the deformation of the test panel and examination of the elasticity range of a coating over any diameter between 3.1 and 38 mm in one single test. The sample panel is secured by means of two clamping knobs which have to be tightened and loosened by turning respectively clockwise or anti-clockwise.

Features include a sturdy apparatus made of a combination of anodized aluminum and stainless steel and a large knob on the bending arm for easy and smooth bending.

www.gardco.com



Phoseon Technology Breaks New Ground with 20W/cm² UV LED Output

Phoseon Technology now offers the FirePower Family of UV LED curing products with even higher peak intensity. The FirePower products are high performance water-cooled LED curing lamps offering 12W/cm², 16W/cm², and now 20W/cm² peak irradiance. These products offer advanced capability for new applications in flexographic and wide-format digital printing while also allowing system builders to increase their speed in other applications.

The FirePower product family is available in four curing length options; 150x20mm, 225x20mm, 300x20mm, and 350x20mm.

While bringing the three-tiered benefits of UV LED curing (economic savings, environmentally friendly, and new systems capability), Phoseon's products add additional capability with high performance, maximum UV energy, and outstanding reliability for customers' tough curing environments.

www.phoseon.com



Pan Technology

The PanTINT 81 Series are universal volumetric/gravimetric factory, colourants for solvent-based Industrial, Maintenance, and Wood finishes. The PanTint 81 Series are prime examples of optimized dispersions, rendering the maximum colour value of each colour pigment. As with the other PanTint Series of products, you can expect broad compatibility with a wide range of resin systems. The pigments for these colourants are selected based on performance requirements often seen in industrial applications; colourfastness, weather and chemical resistance.

PanTINT 81 Series colourants are specifically designed for gravimetric and volumetric tinting purposes. Based on a unique proprietary acrylic resin PanTINT 81 Series colourants show a broad compatibility in various solvent-based systems, enhancing film properties while not impacting gloss and viscosity. It is compatible with acrylics, alkyds, epoxies, polyurethanes, chlorinated rubber, vinyl lacquers, nitrocellulose lacquers, polyesters, vinyl toluene alkyd and alkyd urea.

PanTINT 73 are pigment dispersions for industrial solvent-based epoxy coatings. They consist of industrial quality organic and inorganic pigments finely milled in Bisphenol A carrier resin.

The pigments chosen for the PanTINT 73 exhibit colour strength, durability, chemical resistance and lightfastness. Most are suitable for interior and exterior applications.

The epoxy carrier resin along with a proprietary additive package allows for high pigment solids and superior compatibility with a number of epoxy-based systems.

The 73 series will be compatible with a wide range of epoxy resin formulations for industrial, maintenance and architectural coating applications.

www.pantechnology.com

Lonza Materials Protection Offers North America New Densil Antimicrobial to Inhibit Growth of Fungi and Algae in Exterior Paints and Coatings

Lonza now offers a new, multi-active blend for use in exterior paints, coatings and related building products.

Densil ZODTM Antimicrobial was developed to address the unique challenges faced by coatings formulators, particularly in tropical environments where mold, mildew, algae and other contaminants deface and damage painted surfaces. With key regulatory approvals in place, Lonza's new Densil product offers an innovative blend of proven actives that offer broad-spectrum antimicrobial properties and other benefits.

The biocidal blend protects painted and coated surfaces from fungi such as mold and mildew, as well as algae. In addition, the additive is chemically stable, does not affect paint applications (such as viscosity and drying times) and delivers long-lasting film protection. Densil ZODTM Antimicrobial is also effective on a diverse array of substrates, including wood, stucco and other surfaces.

Like Lonza's Zinc Omadine ZOETM Antimicrobial, Densil ZODTM Antimicrobial contains Zinc Omadine Antimicrobial and uses a proprietary, colour-stable technology. The concept behind the product is to complement the durable, long-term, controlled-leaching, low-water solubility properties of Zinc Omadine Antimicrobial with a secondary, more water soluble fungicide.

Densil ZODTM Antimicrobial has no volatile organic ingredients and is intended for use in paints,

wood stains, masonry coatings and joint cements, caulks, sealants, mastics and stucco and roof coatings. It inhibits the growth of yeast, fungi and algae.

www.lonza.com

Cortec Introduces Next Generation High Performance Coatings

Waterborne Anticorrosion Coatings have gone through many stages of evolution and improvements in recent years. More stringent environmental standards are pushing the creation of waterborne coatings for corrosion protection forward. Recent innovations from Cortec Corporation's Laboratory enable us to offer new, novel coatings for multi-metal protection. This next generation of high performance water-based acrylic coatings has improved barrier performance and enhanced stability, which provides superior corrosion defense in harsh outdoor, unsheltered applications. CorShield VpCI-386 HP's unique Nano-VpCI formulation contains a mixture of non-toxic organic inhibitors and pigments that offer extended coating protection, which strongly competes with heavy metal zinc-rich primers and paints. Cortec's special combination of additives provides a nanoparticle composite polymer barrier that significantly retards the reaction of metal ionization by ion scavenging and passivation.

www.cortecvci.com

Additive for Increasing the Surface Energy of Cured Coatings

Until now it has only been possible to either reduce the surface energy of cured coatings by adding silicone additives or to maintain its original level by adding acrylate leveling additives. Using the new BYK-3560 the surface energy of cured coatings can now even be increased.

BYK-3560 is based on macromer technology which, as a result of the combination of product properties, opens up new avenues in terms of surface modification. BYK-3560 increases the surface energy of cured coatings overall, especially the polarity resulting in an improvement in the adhesion of subsequent layers such as paints, lamination foils, adhesives, printing inks etc.

This additive also provides better wetting of the cured coating by the subsequent layer and a very good leveling of subsequent layers. Additionally, it improves the leveling of the system in which it is being used. BYK-3560 does not influence the surface tension of the liquid coating and retains the high transparency of clear coats.

BYK-3560 is silicone- and fluorine-free and has 100 per cent active substance. Its usage is recommended to a wide range of systems: aqueous, solvent-borne, UV-curable, and high solid.

www.byk.com

Biosafe No-Voc Organosilane Antimicrobials from Gelest Provide Long-Lasting Surface Protection

Gelest, Inc., today introduced new BIOSAFE silicon-based antimicrobials that protect formulated coatings and compounded polymers for manufactured goods. The No-VOC antimicrobials prevent deterioration and discoloration caused by fungi, prevent algae growth and inhibit the growth of odour-causing bacteria. BIOSAFE materials are colourless, odourless, positively charged polymers that molecularly bond in an environmentally friendly manner to, and are ideal for, bulk surfaces and fabrics that are susceptible to microbial contamination.

BIOSAFE products are patented silicon-based antimicrobials that impart bacteriostatic, fungistatic, and algistatic properties to formulated coatings and compounded polymers. The product offering consists of HM 4100 Antimicrobial Dry Powder, HM 4005 Antimicrobial 5 per cent solution in water and HM 4001 Antimicrobial 1 per cent solution in water. With proper integration, BIOSAFE products have antimicrobial performance in ISO and ASTM testing. BIOSAFE antimicrobials are durable, leach-resistant, and non-migratory.

www.biosafe.com

Celanese Launches New Emulsions

Celanese Corporation, a global technology and specialty materials company and a global leader in vinyl acetate ethylene (VAE) emulsions is adding to its EcoVAE line of VAE emulsions with EcoVAE 450 for low odour primer applications. This product has excellent wet/dry adhesion to a variety of substrates including alkyds, ceramics, and aluminum.

The Avicor line of emulsions grows with a number of new products. Avicor 385 is an all-new vinyl acrylic which is APE-free and designed to give superior performance in interior and exterior paints. The combination of high molecular weight, excellent film formation, and water resistance within the product results in excellent stain and scrub resistance while exhibiting great toughness and durability. The product is also designed to provide broad latitude in paint formulation across a range of sheens from flat to semi-gloss. Avicor 390 is a vinyl acrylic emulsion capable of creating very low VOC interior and exterior paints which exhibit excellent stain resistance.

Celanese Polysolvan O solvent will also be highlighted for use in automotive paints. Because of its very low volatility, Polysolvan O is used chiefly as a paint additive in the form of a highly effective flow agent.

Celanese offers a range of products for use in industrial adhesives for paper packaging and converting, woodworking and the building and construction industry. Celanese has a broad array of VAE, styrene acrylic, PVAc and vinyl acrylic emulsions in addition to the Ateva brand of EVA polymers for use in industrial adhesives for wood and packaging applications. In addition, the company will present solutions for the building products industry with its TufCOR line of emulsions.

www.celanese.com

INDUSTRIAL FINISHING: AUTOMATIC LIQUID PAINT SPRAY GUNS

Continued from page 17



Trilogy Automatic gun from Nordson.

pattern from the gun. The serialized spray report gives the end user confidence their AirPro EFX gun will deliver outstanding finish quality.

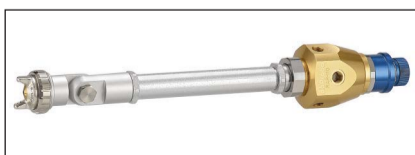
Customers also want precision spraying to reduce their material usage and improve their transfer efficiency. The AirPro EFX has precision fluid flow adjustment with a micrometer-telescoping knob. The micrometer-telescoping knob, not only allows for small incremental changes in fluid flow, it is numerical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

Nordson has available the Trilogy Electrostatic Liquid Spray System.

Featuring two atomization technologies – air spray and high volume, low pressure (HVLP) – Trilogy systems deliver versatility, with superior application performance on a variety of substrates, coatings and part profiles. Trilogy electrostatic spray systems incorporate the latest in engineering and design materials, resulting in benefits that decrease the cost of ownership and enhance a finisher's bottom line. Features include:

- The highest kV in the industry – 93 kV – increasing transfer efficiency, reducing material costs and improving part finish.
- Tough and durable gun bodies minimize maintenance costs and downtime.
- Well-balanced, handle-forward gun design ensures operator comfort for better productivity.

Prona automatic spray guns specialize in fine atomization and high transmitting efficiency. All models are convenient to operate and are low maintenance. The newest model, Prona RAR-2000, features



Prona RAR-2000 and RAR-1218 spray guns.

reduced air consumption, coating material savings of 20 to 30 per cent compared to traditional automatic spray guns. Newly designed RAR-2000 is easy to operate due to its inlet and outlet holes being separate from each other, reducing cleaning hassles. Prona automatic spray guns are suitable for all industrial spray finishing and are widely used in different parts of the world.

SATA Canada offers the SATAjet 1000 A RP Pressure fed high performance spray gun for painting automats and robotic spray guns.

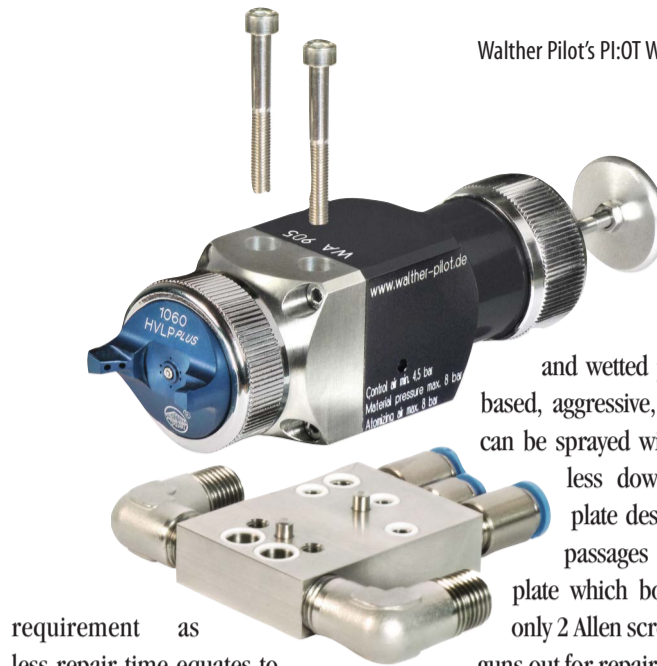
This versatile automatic spray gun is efficient in optimized RP high pressure technology. With an extremely high trans-



The SATAjet 1000 A RP.

fer efficiency, the SATAjet 1000 A is suitable for paint jobs where high application speed is required. Manual adjustment of the round and flat fan with the adjustment screw allows for easy handling, and an adjustable material flow rate can be reproduced with the help of a detent, making work efforts more seamless. With an operating pressure 50-58 psi, and a maximum possible air pressure of 145 psi – this is an extremely high performance piece of equipment to ensure complete control, and precise finishes. To ensure a trouble-free manufacturing process, the SATAjet 1000 A has an assortment of quick change adapters available, and to reproduce atomization parameters, special test air caps are available to ensure flawless manufactured finishes every time.

Jorges Flores from **Walther Pilot North America**, LLC says, "There are a number 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." He adds, "With many companies running three shifts, durability is now a primary



Walther Pilot's PI:OT WA 900 automatic gun.

requirement as less repair time equates to direct monetary savings. This is the area in which our products stand out.

"With properly matched needle and 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," says Flores. "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."

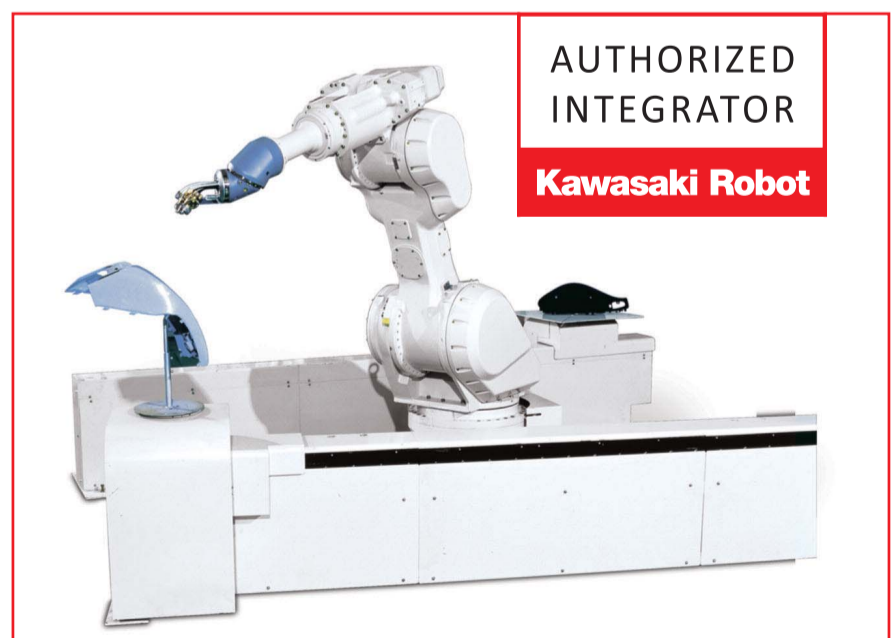
The PILOT WA 900 is **Walther Pilot's** newest, most fully featured and versatile spray gun. Its build is of the highest quality and it boasts many features that enhance performance, durability and ease of use. Cleaning is made much simpler with its PTFE-coated gun body while its stainless steel front body

and wetted parts ensure that water-based, aggressive, and corrosive material can be sprayed without issue. Experience less downtime with its adapter plate design; all material and air passages are fitted to an adapter plate which bolts on to the gun with only 2 Allen screws. You can easily swap guns out for repair or maintenance without dealing with stubborn hose connections. The WA 900 is available in Conventional, HVLP, HVLP Plus (up to 88 per cent transfer efficiency), Abrasive Resistant, and Adhesive (solvent/water based) versions. Various nozzle sizes and extensions are also available.

Efficiency in operation is a key trait in automatic liquid paint spray guns that customers are asking for and manufacturers are providing guns to suit every finishing need.

Editor's Note: Automatic Liquid Spray Gun Manufacturers mentioned in this article can be contacted at:
www.anestiwata.com
www.exel-na.com
www.finishingbrands.com
www.graco.com
www.nordson.com
www.pronatools.com
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2014 Powder Coating Technical Conference Agenda

The 2014 Powder Coating Technical Conference offers 44 hours of programming presented by the TOP experts in the powder coating field. The agenda is broken into four tracks that align with the needs of attendees who are looking to start or improve their powder coating operations.

The 2014 Powder Coating Technical Conference takes place during the 2014 Powder Coating Show at the Lucas Oil Convention Center in Indianapolis, IN on September 16-18, 2014. Sign up today for this once a year educational opportunity.

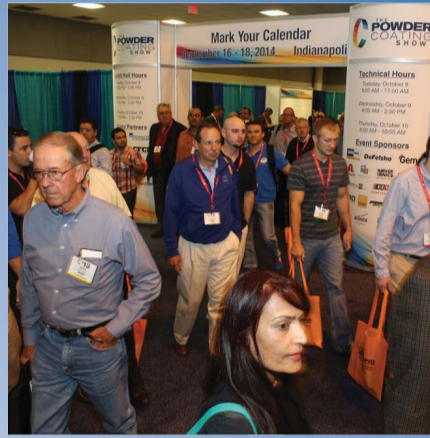


	Track #1: Pretreatment for the Ultimate Powder Coating Protection		Track #2: Powder Coating From Start to Finish		Track #3: Optimizing Your Powder Coating Process		Track #4: Advancements in the World of Powder Coatings	
September 16, 2014								
1:30pm - 2:30pm	1.1.	Thomas Farrington, Paul Caszatt & Randy Poulsen - Surface Pretreatment Testing and Control Best Practices	2.1.	Steve Houston, Ron Cudzilo & Phil Flasher - A Complete Introduction to Powder Coatings	3.1.	Rodger Talbert - Advanced Powder Coating	4.1.	Mike Thies - Getting 'Pumped' on Powder Coating
2:45pm - 3:45pm	1.2.	Sergio Mancini - Pretreatments: Dry-In Place vs. Phosphates and Zirconium Chemistries					4.2.	Ronald McMahon - Innovations in Powder
4:00pm - 4:30pm	1.3.	Maggie Zhu - A Chrome Free Conversion Coating for Aluminum Alloys	2.2.	Ron Veiders - Just in Time Masking for Aerospace Applications	3.2.	Bruce Bryan - Hooks, Racks and Productivity	4.3.	Todd Wenzel - Leveraging Mobile Technology = Soaring Above Your Powder Coating Competition
4:45pm - 5:15pm	1.4.	David Chalk - Final Seals for Powder Coating	2.3.	Larry Ensley - Make Money with Your Stripper	3.3.	Ervin Miller - Sales and Customer Service for Custom Coaters	4.4.	Frank Mohar - Fast Color Changes - It's About Time
September 17, 2014								
8:00am - 9:00am	OPENING GENERAL SESSION							
10:00am - 11:00am	1.5.	Thomas Cape - Improved Pretreatment Coating Weight Measurements Using X-Ray Fluorescence (XRF)	2.4.	Jeff Hale - Voltage vs. Current and the War on Great Looking Parts	3.4.	Nick Liberto - Estimating and Reducing Your Coating System's Operational Costs	4.5.	Robert Cregg - AAMA Specifications and High Performance Powder Coatings
12:00pm - 1:00pm	1.6.	Raymond Graffia Jr - Recycling Aqueous Cleaning Solutions for Powder Coating	2.5.	Rick Dostie, Marty Korecky, Thomas Flannery & Steve Polanski - Understanding Cure	3.5.	Daniel Davitz - "Racking" Up Profits	4.6.	Beth Ann Pearson - Advancements in Powder Technology in the Defense Industry
1:15pm - 2:15pm	1.7.	Kirk Beaster - Pretreatment Troubleshooting	2.6.	Greg Dawson, John Sjudges and Bill Owens - Building Blocks of a Powder System	3.6.	John Cole & Mike Wittenhagen - Preventative Maintenance and Troubleshooting Powder Application Equipment	4.7.	Joe Glassco - Color Change From Dinosaurs to Race Horses
2:30pm - 3:00pm	1.8.	Suresh Patel - Building Blocks for Your Pretreatment Process					4.8.	Michael Wyrostek - Innovations in Antimicrobial Coatings
3:15pm - 3:45pm			2.7.	TBD	3.7.	Luke Burkholder - Formulation of a High-Performance Adhesive System for Masking in Plating, Anodizing and E-Coating	4.9.	Lynette Drumm - High Temperature Resistant Powder Coatings
September 18, 2014								
8:30am - 9:30am	1.9.	Suresh Patel - Next Gen Non-Phosphate Pretreatment	2.8.	John Cole, Travis Johnson, TBD & TBD - After Market Automotive Finishing: Powder Coating for Curb Appeal	3.8.	Marty Korecky & Thomas Flannery - Navigating The Regulatory Environment	4.10.	Loren Smeester & Brian Wendorff - Powder on Powder: Proven Methodologies at Hartford Finishing
9:45am - 10:45am	1.10.	JB Graves & Bruce Dunham - The Moderns Pretreatment System: Solutions for Maximizing Efficiency, Reducing Operations Costs and Decreasing Environmental Impact.	2.9.	Nick Liberto & Ken Kreeger - Small to Mid Volume Powder Coating Systems	3.9.	Chris Merritt & TBD - Whatever Happened To The Five "E"'s of Powder Coating	4.11.	Jason Gatton, TBD & TBD - Powder Coating System Case Study
12:00pm - 1:00pm	1.11.	Mark Franklin - Mechanical Pretreatment Study on PC	2.10.	Infrared - TBD	3.10.	Bill Oney - Paint Hooks: Get Grounded and Make Contact	4.12.	Mike Patterson - Expanding Your Horizons With Fluoropolymer Coatings
1:15pm - 2:15pm	1.12.	TBD	2.11.	Jeff Quill - Accelerated Weathering Testing for the 21st Century	3.11.	Mike Streepy - Safety and Regulatory Guidelines for Powder Recovery Systems and Applications	4.13.	Steve Houston - PC in layers

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