



CFCM

CANADIAN FINISHING & COATINGS MANUFACTURING

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April 2009



The Buzz on Manual Spray

CFCM asked manufacturers and distributors to describe their newest lines in manual spray guns for industrial paint finishing.

Can Am has available the Can-Am #2400-KIT spray gun package that consists of a Turbine Powered H.V.L.P. Cup Gun that comes complete with a Pressurized 1 quart cup and a Pressurized 1 pint cup plus a Pressurized 1/2 pint cup. This gun is mainly used to apply High Cost Coatings where the Transfer Efficiency capabilities of an Industrial Quality.

Turbine Powered air supply system is most appreciated by a business owner because industrial quality turbine powered (hand-automatic or robotic spray) systems normally reduce liquid paint

continued on page 13

Dave Schwartz, ITW GEMA powder coats a part during Coating West in Vegas.

ALSO IN THIS ISSUE

- Coating West Coverage direct from Las Vegas, NV
- Paint Manufacturing Equipment
- Agricultural and Off Road Finishes
- New Products

And More!

Water Bourne -UV Curable Coatings

BY FRANK JOSSINET

Until the early 1990's, the demand for water-borne coatings had been generated by an in-can coating product that wasn't flammable primarily for retail use or for the smaller industrial user. The movement for lower Volatile Organic Compounds (VOC's) and reduction of HAPs was occurring in the United States. End-users started to take more notice of water-borne coatings and ultra-violet (UV) cured coatings as a means of meeting their VOC requirements. However, both of these chemistries had their drawbacks. The water-borne coatings did not provide the performance properties required such as chemical resistance and durability. Ultra-violet cured coatings were limited to flat stock to obtain the



physical cure required. The coatings would be thick and were well suited for roller coater applications. The use of spray applied 100 per cent non-volatile UV-coatings required significant reduction either by the addition of solvents (VOC advantage lost) or monomers (health concern). An advantage presented by some water-borne coatings was

continued on page 12

IN THE NEWS

Association News

TOSCOT Begins to Explore its Options.

By Pete Wilkinson

On the evening of April 6, 2009, the Toronto Society for Coatings Technologies (TOSCOT), held a special wine and cheese event and meeting in Toronto, to discuss the association's direction. The 2008 amalgamation in the USA of the National Paint and Coating Association (NPCA) and the Federation of Societies for Coating Technologies (FSCT) and declining membership has led to an initiative from TOSCOT to explore its future. TOSCOT, a chapter of the FSCT, has a several options.

TOSCOT offers an educational program, the Diploma in Coatings Technology, that they intend to universalize outside the Toronto market by transfer to electronic media for remote learning and explore translation into French. TOSCOT is having discussions with several organizations on how best to continue and fund this expansion.

"We can amalgamate with another organization such as the CPCA (Canadian Paint and Coating Association) or OCCA, do nothing, dissolve the organization or another option that has not presented itself. TOSCOT membership is in decline

continued on page 4

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SQV-250-6	0.250	6"	250	\$66.53	\$61.54	\$58.46
SQV-180-8	0.180	8"	250	\$44.15	\$40.84	\$38.80
SQV-180-12	0.180	12"	250	\$55.83	\$51.65	\$49.07
SQV-250-12	0.250	12"	125	\$52.19	\$48.28	\$45.87
SQV-120-20	0.120	20"	250	\$52.66	\$48.71	\$46.27
SQV-180-20	0.180	20"	125	\$37.62	\$34.80	\$33.06
SQV-250-20	0.250	20"	125	\$75.67	\$70.00	\$66.50
SQV-250-24	0.250	24"	125	\$87.16	\$80.62	\$76.59

CV-HOOKS

Part No.	Wire Diameter	Length	Quantity Per Bag	1 Bag Price	5 Bag Price	10 Bag Price
CV-044-3	0.044	3"	1000	\$12.49	\$11.74	\$11.15
CV-062-4	0.062	4"	1000	\$18.67	\$17.55	\$16.67
CV-120-4	0.120	4"	1000	\$30.70	\$28.86	\$27.42
CV-076-6	0.076	6"	1000	\$29.80	\$28.01	\$26.61
CV-120-6	0.120	6"	1000	\$42.87	\$40.30	\$38.29
CV-180-7	0.180	7"	500	\$53.10	\$49.91	\$47.41
CV-120-10	0.120	10"	500	\$38.72	\$36.40	\$34.58
CV-120-14	0.120	14"	500	\$55.20	\$51.89	\$49.30
CV-180-18	0.180	18"	250	\$48.50	\$45.59	\$43.31
CV-180-24	0.180	24"	250	\$72.20	\$67.87	\$64.48

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V-062-4	0.062	4"	1000	\$18.67	\$17.55	\$16.67
V-120-4	0.120	4"	1000	\$30.70	\$28.86	\$27.42
V-180-5	0.180	5"	1000	\$98.50	\$92.59	\$87.96
V-062-6	0.062	6"	1000	\$23.77	\$22.34	\$21.22
V-076-6	0.076	6"	1000	\$29.80	\$28.01	\$26.61
V-120-6	0.120	6"	1000	\$42.87	\$40.30	\$38.29
V-076-7	0.076	7"	1000	\$33.38	\$31.38	\$29.81
V-120-2	0.120	7"	1000	\$48.80	\$45.87	\$43.58
V-120-8	0.120	8"	500	\$28.40	\$26.70	\$25.37
V-180-8	0.180	8"	250	\$27.80	\$26.13	\$24.82
V-120-10	0.120	10"	500	\$38.72	\$36.40	\$34.58
V-120-12	0.120	12"	500	\$42.90	\$40.33	\$38.31
V-120-18	0.120	18"	250	\$39.00	\$36.66	\$34.83
V-180-32	0.180	32"	250	\$91.00	\$85.54	\$81.26

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C-044-4	0.044	4"	1000	\$13.40	\$12.60	\$11.97
C-076-4	0.076	4"	1000	\$20.70	\$13.46	\$12.79
C-062-6	0.062	6"	1000	\$23.77	\$22.34	\$21.22
C-120-6	0.120	6"	1000	\$42.87	\$40.30	\$38.29
C-076-8	0.076	8"	500	\$18.65	\$17.53	\$16.65
C-120-8	0.120	8"	500	\$28.40	\$26.70	\$25.37
C-180-8	0.180	8"	250	\$27.80	\$26.13	\$24.82
C-120-12	0.120	12"	500	\$42.90	\$40.33	\$38.31
C-180-12	0.180	12"	250	\$38.85	\$26.52	\$25.19
C-120-24	0.120	24"	250	\$61.87	\$58.16	\$55.25

S-HOOKS

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S-062-4	0.062	4"	1000	\$18.67	\$17.55	\$16.67
S-180-5	0.180	5"	1000	\$98.50	\$92.59	\$87.96
S-062-6	0.062	6"	1000	\$23.77	\$22.34	\$21.22
S-120-6	0.120	6"	1000	\$42.87	\$40.30	\$38.29
S-076-8	0.076	8"	500	\$18.65	\$17.53	\$16.65
S-120-8	0.120	8"	500	\$28.40	\$26.70	\$25.37
S-180-8	0.180	8"	250	\$27.80	\$26.13	\$24.82
S-120-12	0.120	12"	500	\$42.90	\$40.33	\$38.31
S-180-12	0.180	12"	250	\$38.85	\$36.52	\$34.69
S-120-24	0.120	24"	250	\$61.87	\$58.16	\$55.25
S-180-24	0.180	24"	250	\$72.20	\$67.87	\$64.48

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Electroless Nickel to the Rescue and Other Good News

In the wake of all this depressing economic news it is nice to once in awhile read a "good news" story. One such story is that Canada's housing starts were up in March, as reported by CBC news. Another break from bad news came from Barry Lee Cohen, Director of Marketing Communications, Enthone Inc., Cookson Electronics who alerted CFCM to an article printed in New York's Messenger Post, which concerns a pilot's heroism. While this story made international news, the role that coatings played did not. On January 15, 2009 US Airways Flight 1549 was en route from LaGuardia Airport in New York City to Charlotte, NC, and forced to make an emergency water landing shortly after takeoff. A solenoid valve manufactured by G.W. Lisk Company Inc. of Clifton Springs, NY, played a critical role in triggering the emergency power backup system of the aircraft. The plunger and shaft of the solenoid valve were plated with Enthone's ENPLATE® EN-806 electroless nickel process.

G.W. Lisk was one of Enthone's very first customers to install ENPLATE EN-806, a coating used to provide corrosion protection and lubricity to the solenoid valves. In 2002 Mark Zitko, Enthone Research Chemist and the inventor of the process, along with Greg Eck and Rob Collin, Enthone Technical Service Engineers, joined Gary Burton, Enthone Performance Coatings Sales Engineer to install the process during the busy Thanksgiving and Christmas timeframe. Burton, has been working with the account for over 30 years. In addition to ENPLATE EN-806, G.W. Lisk also uses ENTHOBRITE® CLZ-941 zinc process, as well as ENPREP® and ACTANE® surface preparation processes. The news story as published by the Messenger Post, may be viewed at <http://www.mpnnow.com/news/x716052912/Clifton-Springs-firm-key-in-splash-landing>

Meanwhile, when it comes to nickel-plating, this issue of CFCM has a nickel article provided by Ralph Dickson who has extensive experience with Harley Davidson. We are looking for experts like Ralph who are willing to share their wisdom. Please visit our website and download our media kit which includes an editorial schedule. If you are an expert in any of the editorial topics in the upcoming issues and were considering writing down what you know to share with others, we would love to hear from you.

And while you are visiting our website, please take a minute and click on the Buyers Guide link. It is time to update your listing or add one if you are not listed. All those currently listed will be contacted to update. If you have not yet been contacted, please send me an e-mail and I will send you the special link that will get you into your listing in order to update it. You must go into your listing and re-approve it in order for it to be included in our next Buyers Guide. There are also some listing enhancement options available for purchase this year. Please see story this issue in our news section. Deadline for Buyers Guide updating is May 22.

Sandra Anderson, Editor
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www.cfc.ca



CONTENTS

FEATURES

- 1 Manual Spray Guns**
CFCM investigates and presents various manual spray guns available in the Canadian marketplace.
- 1 Low VOC Wood Finishing**
Frank Jossinet of AkzoNobel Wood Coatings examines Water Bourne-UV Curable Coatings.
- Paint and Coatings Manufacturing**
- 9 Paint Manufacturing Equipment**
Dan McKenney of Novaflow Systems, Inc., looks at Automated Dispensing And Batching Systems
- 11 Agricultural and Off Road Finishes**
A look at the latest trends when it comes to coating off road equipment.)

Industrial Finishing

- 12 Low Voc Wood Finishing**
- 13 Manual Spray Guns**
- 15 Stripping**
An in-depth look at the importance of stripping and various methods.

Plating and Anodizing

- 17 Nickel Plating**
Nickel is Class. Ralph Dixon gives us an overview of Nickel Plating.
- 19 Testing Equipment**
CFCM looks at various Testing Methods for Surface Finishing and the equipment needed to perform them.

DEPARTMENTS

Association News	1
From the Editor	3
Company News	6
New Products	21
Ad Index	22
Calendar of Events	23

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Diploma in Coatings Technology presentation. **Front row L to R:** Mirceta Elez, Sachin Sathe, Vivek Gulavane, Instructor Walter Fibinger, Ross Vallesteros, Elizabeth Quintal. **Back Row:** Christopher Lyn, Education Chair Jason Young and Sophia Buharina.



Dave Saucier TOSCOT President discusses the future options for TOSCOT.

Mike Miller, Past International President of the OCCA makes a presentation to TOSCOT Members on joining the international association.



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in part because the paint companies are reluctant to pay for individual memberships and events. In one of our cooperative initiatives we are doing a joint golf tournament June 2nd this year with the OPA (Ontario Paint Association)," said Dave Saucier, TOSCOT President.

Mike Miller from the Oil Colour Chemist Association (OCCA) made a presentation during the April 6th meeting at the offices of L.V. Lomas to over 40 TOSCOT Members. OCCA is a UK based International professional body for technical personnel in the coatings industry with over 16,000 members worldwide. OCCA members are in coatings, paints, printing ink, adhesives, cosmetics, pharmaceuticals.

"We in OCCA believe the most natural fit for TOSCOT and other international societies of the FSCT to become sections in OCCA," said Miller.

Like TOSCOT, OCCA membership is individual rather than corporate. Mike Miller proposed that TOSCOT join OCCA. TOSCOT would become an OCCA section within the Canadian Division but would not be under the existing Ontario section that is currently serving the printing ink market. A single membership would cover both groups and members would be able to attend OCCA events worldwide.

He proposed that the educational committees of both groups and treasuries would remain separate, but that economies could be realized in combining membership, accounting and other organizational functions. OCCA UK would work with TOSCOT to produce a website and newsletter and develop the TOSCOT learning program and develop an international market. TOSCOT members

could apply for Professional Licensure and Charter Scientist and would receive the combined FSCT/OCCA technical publications. The full OCCA presentation is available online at www.toscot.org.

Also during the evening, graduates of the TOSCOT Diploma in Coatings Technology were presented with their diplomas by Education Chair Jason Young. Ross Vallesteros and Sofia Buharina from Royalbond, Vivek Gulavane, from Silchem, Elizabeth Quintal of Unipex, Sachin Sathe and Mirceta Elez from Lorama and Christopher Lyn of Becker Industrial Coatings. Sوسان Belivier of Tremco did not attend.

The Annual General Meeting, May 25, 2009 at the Airport Marriot (6PM) will have a presentation by Jim Quick from the Canadian paint and Coatings Association (CPCA).

TOSCOT Technical Symposium Update

Special room rates for the Toronto Society of Coatings Technology (TOSCOT) Technical Symposium are now available. The Symposium will take place at the Crowne Plaza Niagara Falls – Fallsview on October 29-30. TOSCOT has secured the following rooms at the newly renovated Victorian Style hotel, featuring Crowne's Sleep Advantage Program:

- 37 Fallsview Rooms @ \$159.00
- 38 Traditional Rooms @ \$129.00

For more information on the Symposium, contact program chair Jake Jevric at 800-575-3382 ext. 669.

Association News

RadTech UV/EB West Attracts Strong Turnout

With economics, energy and the environment taking center stage, the RadTech uv.eb West 2009 Conference, held February 17-18 in Los Angeles, CA, drew energized attendees devoted to advancing U.S. manufacturing. Ultraviolet (UV) and electron beam (EB) technologies were spotlighted at the two-day event that showcased UV and EB applications for aerospace and defense, wood, metals, plastics, food packaging, and printing and inkjet. For the first time, the rapidly emerging use of UV/EB in photovoltaics was presented to a standing room only crowd.

The Call for Papers has begun for the RadTech UV & EB Technology Expo & Conference 2010, May 24-26, 2010 at the Baltimore Convention Center in Baltimore, Maryland.

<http://www.radtech2010.com>.

Southern Metal Finishing Conference

The International Surface Finishing Academy will be hosting the 2009 Southern Metal Finishing Conference from Sunday, September 13th through Tuesday, September 15th in historic Charleston, SC.

Celebrating its 6th year, the 2009 Southern Metal Finishing Conference lineup includes five intensive 2-day training workshops on Powder Coating, Industrial Parts Cleaning, Anodizing, and the internationally recognized Kushner Electroplating Course. The conference will also feature a tract of specialized technical sessions covering industry hot topics such as the lead free directives of WEEE and RoHS mixed in with various other helpful presentations like "Sales and Marketing for the Job shop". Conference attendees will all have the opportunity to discuss specific issues, and learn about new technologies from leading industry vendors in the two-day exposition of exhibits, through several organized luncheons, and during the popular Opening Night Reception.

Monday and Tuesday will be focused on training, filled with workshops, one-on-one interaction with exhibitors as well as other social events.

www.southernmetalfinishing.com

ECS 2009 Showcases the Power of Innovation

The European Coatings Show plus Adhesives, Sealants, Construction Chemicals, which took place in the Exhibition Centre Nuremberg from March 31 to April 2, hosted 806 exhibitors from 42 countries, who offered the approximately 20,000 trade visitors from 90 nations a range of raw materials, laboratory and production equipment, testing and measuring equipment, and services. The volume of visitors and exhibitors exceeded the expectations of the exhibiting companies. The three day event had 160 product presentations at three forums at the heart of the exhibition.

The European Coatings Congress, which started the day before, on March 30, featured 160 speakers who participated in 26 sessions that offered the 461 participants of the congress a look into the future of the coatings industry.

The coatings community meets next year at the American Coatings Show & Conference 2010, April 12-15, 2010, in Charlotte, NC. The next European Coatings Show & Congress takes place in two years at the Exhibition Centre Nuremberg from March 28-31, 2011.

RadTech Webinars

RadTech, the Association for UV & EB Technology is launching several online webinars this year including: UV Measurement for Formulators & Advanced End Users on April 22, 2009; US Manufacturers Don't Call 911! - "Sustainable Coating Strategies for the Future of Manufacturing Using UV/EB Curing"; May 7, 2009; Test Methods for Evaluating Liquid and Cured Film Properties, Date TBA; UV Water-based Systems, Date TBA; US FDA Compliance of UV and EB Cured Formulations Date TBA.

NASF Unveils Preliminary Conference Program For Sur/Fin '09

The National Association for Surface Finishing (NASF) has released the preliminary technical program for SUR/FIN 2009, the surface finishing industry's premier conference and exhibition. The event, set to take place June 15-17 in Louisville, Ky., will offer more than 70 technical paper presentations.

From timely and pertinent topics on chemical conversions to a variety of regulatory sessions, the SUR/FIN 2009 technical conference program promises virtually something for everyone.

The keynote presentation by Ken Mayland, president of Clearview Economics, "Surviving 2009 - Economic Outlook & Advice." The presentation, set for 9:30-10 a.m. on Tuesday, June 16, will clue attendees in on the telltale signs of an economic recovery.

Other topics on the roster: Heavy Metals Removal from Plating Solutions; Plating of Electroless Nickel onto Magnesium; Zincate-Free Plating of Beryllium, Aluminum, Magnesium and Their Alloys; Energy-Saving Anodizing Processes; Behavior of Trivalent Passivates in Accelerated Corrosion Tests; New Solid-State Spraying Processes; and How to Increase First-Time Quality by Reducing Paint Defects, among many others.

www.nasf.org

Pricing Updates

Dow to Raise Prices of Oxygenated Solvents Products

The Dow Chemical Co. has raised prices in North America for Oxygenated Solvents products effective April 1, 2009, or as contracts allow. The company says this increase is required to address the continued escalation in raw material costs.

"The recent escalation in hydrocarbon costs has caused the gap between price and cost to narrow significantly," says Martin Sutcliffe, Global Business Director, Glycol Ethers. "Given the current market conditions, we have no choice but to fully implement this price increase."

People on the Move

New at L.V. Lomas Limited

Rand A. Lomas, Chairman of L.V. Lomas Limited, Brampton, ON, is pleased to welcome Jeff Baumann to the position of Technical Sales Representative, Specialty Business unit in Western Canada.

Baumann joins L.V. Lomas with a wide range of experience in the technical sales field, having worked for companies such as General Fasteners and Pro-Western Plastics. Working closely with Spence Morris, Senior VP of Sales, Mr. Baumann will help in the efforts of increasing sales in the Specialty Business unit, focusing in on the territory of Western Canada.

Rand A. Lomas, Chairman of L.V. Lomas Limited

It is Buyers Guide Time Again

Spring is here and so is the time to update your FREE listing in CFCM's Buyers Guide. Our full Buyers Guide (BG) is online with the print version to be published in July. We have exciting new options this year. If you are currently listed in our online Buyers Guide you must go back into your listing before the deadline of May 22, 2009 and either update or reapprove it in order to be included in our print version.

Once you have completed your listing, you will then have the option to purchase enhancements to your listing through PayPal. To make a purchase, go to your listing in the BG. This page now displays when the record was last updated (located below the company profile). There is a link there for you to update your record. When you click on this you must enter your password. We will include each company's password in the email blasts we send out this year. A company can also click on the 'Forgot your password?' link and the system will automatically send an email if we have your email address in the database. Which brings us to our next request... always include an e-mail address in your listing for CFCM Administration to contact you. Once logged in you can update your record. You will also have an opportunity to buy any of the 3 listing enhancements. When making a purchase you are passed over to PayPal where you enter your credit card info. On completion you are passed back to the Buyers Guide where you can see that the purchase has been processed and the date (12 months) the enhancement expires. You can then buy another enhancement if you so choose. Options include Sponsor Listing, Highlight Listing and Logo. If you are buying the logo option you must upload your company's logo before paying.

Our first e-mail blast will take place around April 20, 2009.

You must go back into your listing from last year and update or re-approve in order for your listing to be included in our print version of the BG.

Our categories include: Industrial Finishes, Industrial Finishing Equipment, Paint & Coating Raw Materials, Paint & Coating Manufacturing Equipment, Custom Coaters and Job Shops and Associations, Education and Government. CFCM especially welcomes more Custom Coaters and Job Shops to make sure they are listed. The listing is FREE.

If there are any questions, please don't hesitate to contact us.

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ed is pleased to announce the appointment of Tom Mouharemis as Sales Manager, Filtration on Tuesday, March 3, 2009. Mouharemis joins L.V. Lomas Limited with over 25 years of experience selling filters to all markets, from pharmaceutical, food and beverage to power generation. Mouharemis has previously worked for companies including Pall Corporation, Amicron Technologies, Weir and John Brookes. Working closely with Mike Steibelt, Marketing Manager of Filtration, Mr. Mouharemis will aid in the sales development and growth specific to filtration

Wagner announces new Liquid Group Manager

Wagner Systems, Inc. is pleased to announce the recent addition to the management team of Hans Wolf as Liquid Group Manager. Wolf comes to Wagner Systems, Inc. from Wagner Industrial Solutions, Scandinavia and brings many years of experience in the industrial liquid division.



Hans Wolf

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the result of Italian polyurethane technology merging with North American ingenuity into something truly amazing. We reached out to our Italian counterparts to collaborate on new formulations that would make the most of our combined expertise. The result of that partnership is a high-performance polyurethane that not only meets strict North American environmental standards, but leaves our competitors at the starting line. Contact your Chemcraft® distributor for a test drive and find out how ^{ONE}Verde™ can take your business to the winner's circle.

- Easier to use, 1:1 mixing ratio*
- Compliant to North American environmental standards*
- Better chemical resistance*
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- Improved non-yellowing properties*
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* In head-to-head testing against competitive brands



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He will be responsible for developing an industrial liquid distribution channel as well as supporting liquid sales to end users. Wolf will also be responsible for training and demonstrations in the new liquid lab facility located at Wagner's USA headquarters in Elgin, Illinois.

Promotions at Enthone Americas

Gary Sutcliffe has been promoted to Manager, Corporate Technical Services – Enthone Americas, by Enthone Inc., a business of Cookson Electronics. Sutcliffe will have overall responsibility for the company's Corporate Technical services Group



Gary Sutcliffe

and the Enthone Americas Plating Academy, both based in West haven CT. he will also be responsible for the Enthone West Haven Quality Control function. His career with Enthone spans over 30 years.

Pat Creque has been appointed sales manager – US Eastern Region by Enthone Inc, He will be responsible for leading and growing the sales of the company's full line of surface finishing and electronic chemical products throughout the Eastern United States.



Pat Creque

Creque brings a wealth of experience to Enthone, having served in a broad range of sales management, marketing and senior management positions at proprietary chemical companies throughout his 30-plus year career. Prior to joining Enthone, Creque worked t Specialty Chemicals and Services, Novamax, Houghton, and Henkel.

New at Anguil

Anguil Environmental Systems is pleased to announce that Joe Crea (formerly of Ross Air Systems) has joined the Anguil service team. He brings with him over 30 years of experience servicing Ross oxidizers and ovens. Anguil is a global air pollution control and energy recovery system provider located in Milwaukee, WI with over three decades of experience servicing oxidizers, ovens

and heat recovery equipment. The addition of Joe further enhances Anguil's ability to service and commission these systems at industrial facilities, regardless of make, model or manufacturer.

Company News

New CB Mills Distributor

Ion Despoiu, Marketing Director, CB Mills, Division of Chicago Boiler introduces Murray Steeves from Manutrol Inc., who will represent CB Mills in Canada. Manutrol Inc. is a manufacturer's representative for process equipment serving Canadian customers coast to coast. In its 18 years of existence, Manutrol has been committed to providing quality equipment and service to meet the industry processing needs.

Quebec Bridges May Soon Save On Paint: Two Coats Instead of Three

A major technological breakthrough may soon save a coat of paint on the steel structures (bridges, viaducts) managed by the Quebec Ministry of Transport. The saving comes from a two-instead of three-coat system developed by paint manufacturer Prolux in collaboration with the pigment manufacturer, Ferrinov.

"We are proud to be able to bring innovative solutions to help reduce the cost of maintaining our infrastructures and prolonging corrosive protection," said Jacques Beaulieu, chief executive officer of Prolux Paints Inc. "Our new two coat corrosion protection system not only reduces infrastructure downtime, but also results in environmental and cost benefits."

Apart from reducing driver annoyance over infrastructure repairs, this world first will cut the labour costs of surface renewal and corrosion protection by about 25 per cent.

On-site trials of Prolux's new two-coat system will begin in 2009, according to the latest technical information bulletin issued by the Ministry of Transport's DLC laboratories (Direction du laboratoire des chaussées).

The performance of Prolux's paint system in laboratory tests exceeded the Ministry's stringent standards for zinc-based paint systems, the DLC has concluded.

Numerous constraints at construction sites,

particularly those related to the environment and traffic management, coupled with rising raw material prices, have constantly increased the cost of painting structures, points out the DLC. That's why the Ministry of Transport has been laboratory testing certain two-coat paint systems. Among other benefits, these systems could reduce work site time, alleviate driver inconvenience and diminish overall project costs, specified the DLC.

Rohm and Haas Canada Inc., West Hill Joins OEL Program

Rohm and Haas' West Hill facility is the first chemical company to join the Ontario's Environmental Leaders (OEL) Program. From 1991 to 2003 the West Hill facility reduced its emissions by more than 65 per cent for compounds reportable to the National Pollutant Release Inventory (NPRI) and under Ontario Regulation 127. Rohm and Haas' West Hill facility is committed to further reductions, beyond existing legal requirements. Through the OEL program Rohm and Haas has agreed to target:

- A 50 per cent reduction of 2-Ethylhexanol emissions, compared to 2003 baseline values.
- Conducting an Energy Audit, including infrared scans of buildings, to detect energy losses as part of its Greenhouse Gas evaluation strategy.

The Rohm and Haas' West Hill plant is part of the Architectural and Functional Coatings business and produces over 120 different Acrylic-Emulsion recipes. These high performance emulsions serve the industries of:

- Commercial and industrial paint and coatings
- Industrial finishes for metal, plastic and wood
- Traffic markings; elastomeric roof coatings
- Leather processing
- Paper coatings
- Printing inks and overprint varnishes
- Textiles and non-wovens.

Approximately half of the produced volume is exported outside of Canada.

Belzona Announces Opening of New Office in Richmond Hill, ON

Belzona, a world leader in the design and manufacture of industrial protective coatings and polymer repair composites, is pleased to announce the



opening of their new office, Belzona Great Lakes Holdings Ltd, based in Richmond Hill, ON, having acquired the distribution rights for the Province of Ontario.

Kimberly Svendsen, Corporate Development Director for Belzona explained, "Belzona's corporate mission is to encourage strong and steady growth among each one of its' Distributorships within the network. A key component of our business plan is to build strong neighbors and to achieve proper territory coverage. This recent purchase brings Belzona one step closer to the accomplishment of this goal."

Along with the commitment to enhance Belzona's market potential and visibility within the region, Belzona will devote additional resources to creating a new training facility. This facility will serve to further the educational requirements of Belzona's Canadian Distributors, Consultants, and Contractors as well as the North American Distributors.

Belzona operates through a global Distribution network of over 140 Distributors present in 120 countries, providing a wide range of solutions to problems encountered in industries such as Power Generation and Distribution, Water and Wastewater, Oil and Gas and the Marine industry.

Since its' beginnings in 1952, Belzona has gained extensive experience and knowledge to provide solutions for many areas such as the coating of marine and process vessels, pump efficiency enhancement, renovation of heat exchangers, cold bonding, rotating equipment refurbishment, protection against corrosion under insulation, roof repair and protection, water and weatherproofing buildings and a myriad of other common problem areas.

Canadian companies, Fielding JNE bring sustainable waste management practices to China

Ellen McGregor, President of Fielding Chemical Technologies Inc. and Joe Ng, President of JNE Consulting are excited to announce that their two companies have joined forces to sell turnkey solvent recovery and refrigerant reclamation plants in China. The joint venture – called Fielding JNE – will design, build and commission plants, and will provide the expertise required to responsibly manage chemical and refrigerant wastes.

Although JNE had provided engineering services to Fielding over the years, the two company Presidents first met on the Trade Mission to China, led by Premier Dalton McGuinty last fall. They immediately recognized the potential of a joint venture.

Bombardier Lands C-Series Aircraft Program

Bombardier Inc. has finally landed a firm order for its C-Series aircraft program, putting the maker of planes and trains in competition with heavyweights Boeing Co. (USA) and Airbus SAS (Europe).

Montreal-based Bombardier and Deutsche Lufthansa AG signed a firm purchase order for 30 C-Series aircraft in a deal valued at US\$1.53 billion.

Lufthansa, which became the launch customer for the proposed 110 to 130-seat plane in

Bayer MaterialScience explores graffiti-resistant waterborne polyurethane coatings

Technical presentation discusses low-VOC coatings that provide easy graffiti removal with matte, semi-gloss or high-gloss finish for concrete substrates

Until recently, graffiti-resistant coatings were only available in solvent-based formulations that exhibited a glossy finish. Now, however, there is a more environmentally friendly alternative for concrete substrates: two-component waterborne polyurethane coatings. In addition to being more eco-friendly, these ultra-low volatile organic compound (VOC) waterborne polyurethane coatings also achieve an unmet need in the construction market: graffiti resistance with a matte finish.

The development of these graffiti-resistant, two-component waterborne polyurethane coatings, their properties, and tests examining the reasons they exhibit good graffiti resistance, were explored in detail at PACE 2009, the annual conference and exhibition, sponsored by the Painting and Decorating Contractors of America and the Society for Protective Coatings, Feb. 15 – 18, 2009, in New Orleans. Peter Schmitt, senior technology manager and Kathy Allen, associate scientist, both of Bayer MaterialScience LLC, presented the technical paper, Now You See It Now You Don't: Waterborne Polyurethane Graffiti Resistant Coatings, during a session entitled "Durability Defined: Taking Ultra-High-Performance Coatings to the Next Level."

According to the authors, it has been generally accepted that to obtain a surface that is easily cleaned of graffiti, the coating used needed a surface energy lower than the surface tension of the graffiti paint. The lower energy would make it difficult for paint to adhere to the coating, making the graffiti easily removed. However, the waterborne coatings used in the tests had higher surface energies yet were still easy to clean of graffiti.

Using atomic force microscopy (AFM), the authors determined that surface roughness played a factor in a coating's ability to be easily cleaned; graffiti can adhere well to a surface that has imperfections, which are a common trait in coatings with a matte finish. However, without pores to serve as anchors for graffiti paint to stick, a surface with a roughness between 10 and 300 nm is easily cleaned. Both glossy and matte finishes can be achieved in that range.

The authors state that a coating must have a delicate balance of characteristics in order to achieve a matte finish while remaining graffiti resistant. The balance is realized through the proper reaction rate and coalescence speed of a coating as it changes from discrete particles to a continuous film, but without the alignment of a glossy surface. Because a two-component waterborne polyurethane coating is made up of two distinct types of particles, there is competition between the physical change (coalescence) and the chemical reaction (creating urethane groups).

"We conclude that with waterborne polyurethane coatings, it is possible to combine good cleanability in an environmentally acceptable system," said Schmitt.

Bayer MaterialScience LLC is one of the leading producers of polymers and high-performance plastics in North America and is part of the global Bayer MaterialScience business with nearly 15,400 employees at 30 sites around the world and 2007 sales of 10.4 billion euros.

July, also has options to purchase an additional 30 of the planes. They will be operated by the German carrier's Swiss International Air Lines Ltd. subsidiary.

Bombardier's shares went up more than 11 per cent, or 29 cents, to \$2.88 on the Toronto Stock Exchange following the news.

The long-range C-Series aircraft are slated for delivery in 2013. Bombardier's largest current model is the 90-seat CRJ900 regional jet, although a 100-seat version is scheduled for its first delivery by the end of 2009. The company also builds Q-Series turboprops as well as Learjet, Challenger and Global Express corporate jets.

Dow and Rohm and Haas Acquisition Closes

The Dow Chemical Co. has completed its acquisition of Rohm and Haas. After some legal scuffle brought about by financing and economic concerns, Dow Chemical and Rohm & Haas settled their \$15.3 billion merger, with Dow honoring the agreement at \$78 a share. The deal closed on April 1, 2009.

Combining the technologies of the two companies has created a \$14.0 billion diversified business called Dow's Advanced Materials division, which is expected to achieve \$3.0 billion in added growth opportunities, as well as annual cost synergies of \$1.3 billion.

Pierre Brondeau has been named President and CEO of the new Advanced Materials division, which includes Coatings, Building and Construction, Specialty Materials, Adhesives and Functional Polymers, and Electronic Materials.

Dow has decided to exercise its option to have the Haas Family Trusts make an additional \$500 million investment in Dow equity. This is consistent with Dow's plan to retire the bridge loan for the financing of the Rohm and Haas transaction by the end of 2009, which will be accomplished through the sale of assets, issuance of equity and debt, and the previously announced reduction in the company's dividend to preserve cash.

Under the terms of that agreement, Dow is required to divest the following businesses: Clear Lake, Texas, acrylic acid and esters plant and the related glacial acrylic acid, butyl acrylate, and ethyl acrylate businesses in North, Central, and South America; UCAR Emulsion Systems specialty latex businesses in North America; and North American hollow plastic pigment business (also referred to as the hollow sphere particle business). Dow has been actively seeking buyers for the impacted businesses.

One of Dow's first acts after the sale was to sell Morton Salt, Rohm and Haas' salt business, to a German company. Morton International Inc., the salt business of Rohm and Haas, was sold to K+S Aktiengesellschaft, Kassel, Germany. K+S is one of the world's leading suppliers of specialty and standard fertilizers, plant care and salt products, and a German DAX 30 company.

BASF and Ciba Deal Closes, Company Restructures

BASF expects the approvals of the relevant antitrust authorities and the closing of the Ciba transaction toward the end of the first quarter of 2009. The initial organizational changes were effective as of April 1, 2009, as BASF is taking steps to optimize its structures in order to sharpen the company's focus on its customer industries. BASF's Performance Products segment

is being developed further.

The "discovery phase" began immediately after closing. During this phase, which is expected to last about two months, joint teams consisting of BASF and Ciba employees will analyze the acquired businesses in depth. The goal of the analysis is to define a market-oriented position for the combined businesses as well as the optimal organizational structure. The actual integration process is then expected to start in the second half of 2009 on the basis of these results.

The Performance Products segment currently consists of the Acrylics & Dispersions, Care Chemicals and Performance Chemicals divisions, as well as a new division, Paper Chemicals. This division consists of BASF's paper chemicals, binders and kaolin minerals business. The head of the new division is Ehrenfried (Fred) Baumgartner.

The Acrylics & Dispersions division has been renamed Dispersions & Pigments. This division incorporates BASF's business involving raw materials for the coating and paint industry. As a result, the dispersions business is complemented by the pigments and coatings resins business. The acrylics business has been reassigned to the Petrochemicals division, which encompasses the key steps in the propylene value chain. The superabsorbents business will be assigned to the Care Chemicals division. The majority of Ciba's coating effects business will be integrated into the Dispersions & Pigments division after the discovery phase.

H.B. Fuller Buys Nordic Adhesives

H.B. Fuller Co. has agreed to acquire Nordic Adhesives, a developer and manufacturer of flexible packaging adhesives, based in Buxtehude, Germany. Nordic had net revenue of approximately \$9 million in 2008. The stock acquisition encompasses all Nordic business operations, including the company's product line and technical expertise.

Rohm and Haas Earns Best Paper Award at European Coatings Congress 2009

Zhenwen Fu, a scientist with Rohm and Haas' Paint and Coatings Materials division, was awarded Best Paper recognition during the 2009 European Coatings Show Congress held in Nürnberg, Germany. Fu's paper dealt with a new diffusion technology in latex paint film formulations. In latex-based coatings, VOCs are used as coalescents

to ensure film formation. This new technology significantly improves early property development of waterborne latex coatings in a reduced, low-VOC formulation that maintains coalescence performance to achieve required hardness, block, print and dirt pick-up resistance necessary for industrial coatings.

Fu has contributed to over 50 patents and publications in the areas of metal and semiconductor clusters, analytical method development and instrumentation, latex film formation, colloidal science, paper coatings, and inkjet ink technology.

ITW Gema and Halo Coatings Team up To Market New Retro-Reflective Coating

ITW Gema and MKB Ilc (Halo Coatings) have reached an agreement on a strategic global partnership to promote a new technology, known as the Halo Process. This unique process utilizes powder coatings that are designed to reflect light; and this major breakthrough in coating materials is expected to impact markets where nighttime safety or reflectivity is important.

Retro-reflectivity is the return of light to your eye along the same path as the light source - the functional principle in all nighttime safety tape used on products such as street signs, truck delin-eation, or bicycle reflectors. With the Halo Process, retro-reflective powder coatings can now offer tremendous benefits in place of tape application and "light up at night" for improved safety.

This new partnership allows ITW Gema, a leading supplier of powder coating application and recovery equipment and Halo Coatings, a leading developer of retro-reflective powder coatings, to join together and provide a manufacturing solution for producing products with a retro-reflective surface on nearly any substrate, and in three dimensional configurations and shapes. Guardrails that become life saving rays of light at night; bicycles that can be fully seen in the dark from over 1,000 feet away and hi-viz shopping carts are just a few of the new products that are now made possible with the ITW Gema/Halo Coatings partnership.

Proposed ASTM Standard Provides for Use of X-Ray Spectrometry in Testing for Lead Content

The presence of lead in toys and other consumer

products continues to make headlines. The Consumer Product Safety Improvement Act (CPSIA), a United States law enacted in August 2008, addresses the lead issue and makes provisions for the use of X-ray spectrometry in testing for lead content.

To aid the toy and consumer products industries in using X-ray spectrometry for lead detection and meet the requirements of CPSIA, ASTM International Committee F40 on Declarable Substances is currently developing a proposed new standard, WK21957, Test Method for Identification and Quantification of Lead in Paint and Other Coatings Using Energy Dispersive X-ray Spectrometry (EDXRF).

According to Stanislaw Piorek, Principal Research Scientist in the Niton Analyzers business unit of Thermo Fisher Scientific Inc., and a member of Committee F40, using X-ray spectrometry allows for nondestructive testing for lead both in a product and within the paint that covers it. While an ASTM standard that covers XRF testing in paint for lead does exist (E2120, Practice for the Performance Evaluation of the Portable X-Ray Fluorescence Spectrometer for the Measurement of Lead in Paint Films), the proposed new standard will also be appropriate for use with toys and other consumer products.

WK21957 is under the jurisdiction of Subcommittee F40.01 on Test Methods. All interested parties are invited to participate in the standards developing activities of the subcommittee and of Committee F40.

For technical information, contact Stanislaw Piorek, Thermo Fisher Scientific Inc., at stan.piorek@thermofisher.com. Committee F40 meets April 22-24 in Vancouver, British Columbia, Canada.

ASTM International welcomes and encourages participation in the development of its standards. ASTM's open-consensus process, using advanced Internet-based standards development tools, ensures worldwide access for all interested individuals.

Jotun Awarded Eiffel Tower Contract

For the second time, Jotun has landed the contract to supply paint to the Eiffel Tower in Paris. The tower is painted every seven years and the project is expected to need approximately 50,000 liters of paint. The project will start in April this year and

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will be completed in October 2010. The paint is a special corrosion-inhibiting product for steel con-

structions and is supplied in unique shades developed for the tower. The paint is supplied in three shades that will give the impression of the tower being only one color. Mammut Primer and Topcoat RQ will also be used.

PPG to cut 2,500 jobs in restructuring

PPG said it will cut 2,500 jobs in a restructuring plan aimed at saving \$140 million annually. The plan is expected to cost the company approximately \$160 million in cash, it said. A further charge of up to \$50 million is possible later this year as the evaluation and approval of other elements of the restructuring plan, including additional plant closures, are finalized, PPG said. The

first-quarter charge includes the cost of closing a paint manufacturing operation in Saultain, France, several smaller production, laboratory, warehouse and distribution facilities. PPG said a broad reduction in employment across the company globally will result in about 2,500 jobs being eliminated. "These are sweeping steps that will impact all of PPG's business segments and regions," said chairman and CEO Charles Bunch. Bunch said the largest portion of the cost reduction activity will take place in the company's automotive OEM coatings and industrial coatings business units, which have been particularly hard hit by severe declines in global end-use market demand.

Spokane paint-making plant to close

Sherwin-Williams Co. will close its Columbia Paint and Coatings manufacturing facility in Spokane, WA, eliminating 37 jobs. The paint-making plant on Haven Street opened 36 years ago. No retail paint stores are closing, the company said. Sherwin-Williams acquired Helena, MT-based Columbia Paint in 2007. The company operates 120 Sherwin-Williams stores and 42 Columbia Paint stores in six Northwest states. That includes four Columbia and six Sherwin-Williams stores in the Spokane area. The Spokane plant will close this summer because of "the challenges in the economy have created reduced demand and created excess capacity," the company said.

Association News



John Patry, Exel North America and Alan Henderson of Makor USA, pose for the camera at Coating West.



Pat Smiarowski, Colortek Inc. and Joe Mardeusz, JM Painted Parts discuss washing systems with Jay Cressman of Uni-Spray.



Sal Negro and Myles Compton of Electro-Steam.



Craig Caldwell, Mike Shannahan and Melanie Ingalls from Henkel.



Linda and David Beamish from DeFelsko.

COATING WEST 2009 Launches Successfully in Las Vegas

In the first of two regional events to be held for industrial finishers this year, Coating West 2009 successfully launched in Las Vegas on March 2 & 3 at the Planet Hollywood Resort and Casino. The two-day conference & exhibition focused on target markets found on the west coast, including Architectural, Agriculture & Construction Equipment (ACE), Aerospace and Military, Custom Coaters and General Finishing. The event drew 842 participants and 90 exhibiting companies.

Of the conference, Anne Goyer, Show Manager said, "Evaluations from our conference attendees rated our technical sessions the highest I've seen in years." Goyer continued, "Our speakers delivered outstanding content in the conference sessions. Some attendees even noted that it was the best

conference they've ever attended. With the struggling economy, we were very pleased with both the turnout and the evaluations from attendees and exhibitors alike."

Several new events rounded out Coating West. A virtual spray painting competition sponsored by the Iowa Waste Reduction Center was held each afternoon on the show floor. Attendees had the opportunity to show their spray painting skills and compete to win an iPod Shuffle. There was an evening reception for attendees and exhibitors and a Leadership Breakfast for those new to the industry. Coating West ended with plant tours to AR Iron where attendees could view a recently installed powder coating system and to at Nellis Air Force base where attendees viewed both an

F-16 and an F-22 raptor inside a paint booth during the painting process.

"Overall, we are very pleased with the outcome of our first regional event," noted organizer Steve Houston. "I spoke with many exhibitors who had only positive things to say." Coating East is set for September 30th & October 1st in Nashville, TN. www.thecoatingshow.com

Coating West was co-sponsored by The Powder Coating Institute and the Chemical Coaters Association International PCI and CCAI with The Electrocoat Association, Porcelain Enamel Institute and the IRED Div of the Industrial Heating Equipment Association also providing sponsorship support.



Lauri Vuillemin, Jake Wiles and Louie Mendoza from Atotech.



Kristy Pogue, Steve Martin, Derek Bowen, and Christian Canzano from Bex Engineering, Mississauga, ON.



John Finnegan and Jeff Kloes, Global Finishing.



Paul Lomax, Fischer Technology demonstrates a thickness tester to Vito Di Maio, Cameo Metal Products.



Trena Benson and Jack McKeague, DuPont Coating Solutions.



The Rat Pack entertained at Coating West.



Lynn, Bill, Dianne and Steve Whitely from Kiss Equipment, Langley, BC, visit the Nordson booth.



Cindy Delgado, Sheila Siler, and Jerry Trostle from Wagner Industrial Solutions.



Bob Kelly, Daniel Seeder, and John Cole of Parker Ionics with Sheldon Bicknell, SJS.

Automated Dispensing and Batching Systems

BY DAN MCKENNEY

The landscape for paint manufacturers is continuing to change and the demand to further streamline internal processes is an ongoing focus for many companies. Process improvement projects involving capital expenditures are only being issued if they offer very quick return on investment (ROI). This is where automated dispensing and batching systems designed using a “value engineered” approach can help. The following article will provide an overview of what benefits can be derived from this technology and also what manufacturers are doing to assist their clients in designing the proper system with a focus on providing a quick ROI.



BENEFITS OF THE TECHNOLOGY

The benefits derived from automated dispensing and batch systems vary by end user. The following briefly outlines some of the most common benefits:

Raw material storage- the systems are designed to dispense from the raw material source container whenever possible. This ability can dramatically reduce product handling, which in turn, reduces batch manufacturing times. It also reduces the possibility of product contamination and can make the loading and re-loading of materials a safe, simple and clean process.

Batch and lot tracking- with the advent of “Six Sigma” programs the ability to follow the flow of materials used in a manufacturing process through each step of production provides data, which can assist in further process and production changes to optimize internal processes. Many batching systems now offer this capability.

Automated re-circulation and mixing of raw materials- most batching rooms use materials that often have to be properly mixed prior to use. This is a timely process and very labour intensive. When this is not done properly the results

are usually discovered after it is too late and the product is already made. Automated systems offer computer automated re-circulation of the product in the storage containers. In addition, specific components that are prone to structuring

or separation can be set up with computer controlled agitators which are, in turn, operated and monitored by the control software.

Cleaner working environment- Plant safety and hygiene are becoming increasingly important. Auto-

mated dispensers can dramatically improve the working environment.

Batch to batch consistency- A lot of batching operations still utilize “batch card” formats for weighing raw materials. The degree of accuracy in this type of process can vary a



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great deal. A lot depends on the weigh scales, which are normally not very accurate, and on the batch makers themselves. The introduction of an automated process places the responsibility on the computer software to do the job properly. The beauty of this technology is that, if for some reason the system goes outside its operating parameters, it not only knows it but it sends up a flag advising the operator. In turn, it will automatically assist in making batch corrections to the batch if needed. When properly implemented, a computer automated system can effectively eliminate weighing errors, which in turn can dramatically improve batch-to-batch consistency. The latest dispensing software is also "self-learning," constantly striving to tighten down its own processes without operator intervention.

Speed of dispense without sacrificing accuracy- Traditionally gravimetric (weight-based) dispensing has been accurate, but it is often considered slower than volumetric technology. This is changing as a result of a new approach, the "ganging" of valves. When clients need high throughput dispensing companies are doubling up on the dispense valves by combining a high

throughput valve with a high accuracy dispense valve and running them in tandem for large component additions. When a dispensing sequence is nearing its target weight the large valve shuts off and the batch finishes using only the higher precision valve. This capability has a significant impact on batch times and ensures that the highest accuracy possible is achieved.

Automated tracking of VOC /HAPS- automated dispensing system software can also automatically track VOC and HAPS and generate reports on a real time basis.

Spectrophotometer interface- the use of match prediction software is also continuing to improve and automated dispensers are capable of seamlessly interfacing with this technology.

Re-work/work-off programs- many dispensing system manufacturers have integrated work-off programs that keep a historical tally of the exact batch results from everything produced by the system. In turn, if inventory is on hand the software can be set up to automatically search existing stocks and then advise batch makers exactly what can be used and how much. The software will then walk the operator through the process of

weighing out the required material and then automatically dispense the other required components to make the modified batch. When completed, the software automatically adjusts the inventory stock levels accordingly, and records the new data for posterity.

Seamless links to automated production and scheduling systems- in recent years manufacturers have linked production scheduling systems to automated dispensing systems to create a seamless interface with production. This ability can eliminate a lot of overlapping procedures and further streamline internal processes.

Safety measures - manufacturers also offer several unique safety features. A few examples include:

- "No-ground - No-dispense" function- for hazardous area systems.
- Automatic system shut down if no weight change takes place during a dispense sequence.
- Units are also designed to shut down if a major unexplained sudden weight change takes place.

DESIGN OPTIONS

Many manufacturers have adopted a "modular design" philosophy that allows end users to create unique system configurations without in-depth engineering work. This makes it much easier to customize without the normal price up-charges.

The first step in deciding how to proceed is to take a close look at the raw materials you wish to dispense. The types of components vary by end user. In most cases they include coloured dispersions, resins, solvents and various additives (such as plasticizers, dispersants, rheology modifiers, biocides and fungicides).

Designers of automated batching and dispensing systems spend a lot more time and energy assisting clients in defining the required specification than has traditionally been the case. This assessment ensures that the configuration they come up with will cover a broad range of end uses within a single manufacturing operation. This assessment process usually starts out with a lot of questions being asked by the hardware manufacturer. Questions may include:

- What type of chemistry are we dealing with? (Water based, solvent based, UV...). It is important to know this and have a clear understanding to ensure the selection of hose and pump elastomers are compatible with the products they will be pumping.
- How many ingredients do the end users wish to include in the

automation process? In most cases, the starting list is longer than what is actually agreed to in the end once the design evaluation is completed.

- Details on the amount of each product to be dispensed (annual monthly usage)? The variation in the amounts of individual products being dispensed is a very important aspect to designing the proper system.
- Frequency of use? Items that are frequently used should be part of the project scope. The labour involved with repeatedly going through the process of manually adding small ingredients can really reduce overall batch production efficiencies.
- What is the dispense accuracy required? This is a common question and the system designers use this information to decide how best to configure the hardware. For example, if you have a single product that is dispensed in large quantities from bulk tanks we want to make sure we optimize the speed of dispense since timing will be critical.

Once a matrix is compiled and all of these questions are answered, the data is analyzed and details discussed with the client to ensure the information is correct and that they are comfortable with the design approach being taken.

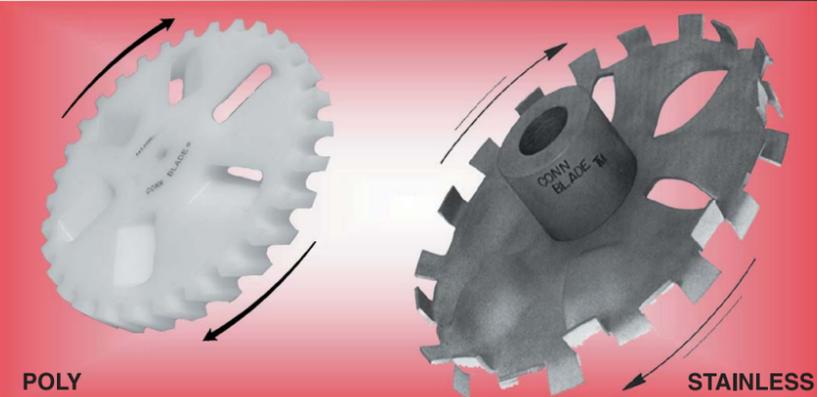
The next step in the process is to gain a better understanding of the chemistry being used. This step looks deeper into the idiosyncrasies of each material slated for dispensing. Some typical questions include: What is the viscosity? How does the product flow? Do any of the components react with one another? Do they separate or settle quickly? Are any of them prone to structuring? With these questions answered, the system manufacturers can go to work designing the final system.

A properly designed system can alleviate many production variables and significantly improve batch-to-batch consistency, which in turn will improve profitability, reduce waste, etc. The one thing that hardware manufacturers cannot quantify without the client's assistance is overall cost savings including time and labour savings, raw material wastage, optimization of product purchasing and efficiency gains using a consistent and repeatable process. ■

Dan McKenney is VP North American Sales for Novaflow Systems, Inc., based in Prescott, Ontario.

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The Answers to Off Road

BY SANDRA ANDERSON

When it comes to agricultural and off road applications, coatings tend to be bright. Customers are demanding more durability and weatherability, mold and mildew resistant and there is a move toward super durable polyesters.

Brian Coutts President of Erie Powder Coatings Inc. says his company offers a variety of finishes.

"Many of the off road vehicle coatings are very aesthetic - bright colors and metallics, specialty textures, etc." He says, "The coatings we offer depend on the application. On top of the colourful coatings for "toys for boys", the hidden parts, under hood and underbody, still have to be coated too."

Coutts says that since the company specializes in custom manufacturing, they offer a high degree of flexibility and "can give customers exactly what they want rather than what we have on the shelf that might be close."

OFF ROAD AND THE ENVIRONMENT



As with every area in coatings, concern for the environment and meeting government relations is always an issue.

"We are probably the strongest manufacturer in Canada in TGIC-Free polyester coatings," says Coutts. "These coatings have a very non-toxic profile, while not having any drawbacks on cost or usability. Of course, these types of products are not only environmentally friendly when they are being applied, but also as they wear, and are eventually disposed of."

MADE IN CANADA

The trend seems to be that many of these agricultural or off road vehicle applications are moving to super durable polyesters.

"The cost is not that much more, and the weatherability is substan-



tially improved," says Coutts.

Erie is also offering a group of products where they guarantee that the products are as "Made in North America" as they can be. "We guarantee that these products are manufactured here at our plants in the United States or Canada," says Coutts.

They also guarantee that this group of products is made with a minimum of 90 per cent raw materials sourced only from North America sources.

"We would make that 100 per cent if we could, but some of the raw materials are simply not made in North America any more," says Coutts.

Meanwhile, Superior Finishes Inc. offer a solvent based ISO Free, and 2K Polyurethane in high solids and high durability coatings.

"We also have water base 2K Urethane," says Jamie Guertin of Superior.

"Our coatings are user friendly for application offering higher sag and faster dry times with high build. Able to airless spray with little to no solvent popping, and in most cases, all this for less cost."

Their actual brand names include: Kynar Aquatec[®] based coatings for systems that allow a lower gloss; the Sequoia[®] based on Kynar Aquatec[®] PVDF fluoropolymer offers 5 times the durability with I.R. reflective pigments that would be ideal for military use. Because it is based on a PVDF fluoropolymer it also is self-cleaning, mold and mildew resistant.

SPECIAL CONSIDERATIONS

Special considerations have to be made in the preparation of Off

the way they were designed, and be as durable as possible.

He says that that most of the Agri and Off Road applications are continually looking for better durability and weatherability, more so now than in years past.

"I think this is an attempt to differentiate locally made products from offshore competitors where the quality is often suspect," says Coutts.

One of Superior Finishes Inc.'s agricultural customers needed a DTM, high reverse impact, fade resistant for two seasons in the dealer's yard, 3.5 mil dry over shot blast without solvent popping at 55 volume solids. Superior Finishes has been selling this coating for 4 years now.

So the answer to off road finishes seems to be super durable polyesters for the agricultural and off road applications need for durability, weather resistance and aesthetics. ■

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their ability to physically dry before being UV-cured. This allowed it to occupy a unique niche for three-dimensional parts and it could be hand sprayed.

ADVANTAGES OF WATERBORNE -UV CURABLE COATINGS

- Ready to use, existing spray equipment is suitable and requires only the outlay for a UV curing machine;
- Provides performance properties on par and superior to premium acid catalyzed coatings and 2-k poly-urethane coatings
- Low VOC's and residual emissions
- Various sheens available
- Open pore look

Using WB-UV does not entail a complete change-over of existing manufacturing equipment. The WB-UV can be applied with existing spray equipment. The drying parameters used mimic those of solvent based coating systems. If the panels were racked and left to dry overnight, the same thing could be done with the WB-UV. The



panels can easily be quality inspected before being uv-cured. Once passed through the lamps, the coating gains its full performance properties. To obtain the full advantage of a uv process, drying equipment could be purchased to further



enhance output and reduce production space requirements. The film must be completely dried before curing otherwise film defects such as white pores or mudcracking will occur during or shortly after cure.

The volatile organic content (VOC) of the WB-UV is generally limited to a neutralizing amine. The minimum film forming temperature of the polymer can be lower than typical water-based resins thus eliminating the need for any coalescing solvents. The WB-UV resins are high molecular weight polymers and have essentially no extractable component. In addition, depending on the WB-UV used, some encapsulating properties may be obtained.

Unlike its 100 per cent counterpart, the WB-UV allows for film shrinkage. The diluent, water, evaporates and allows the matting agents to disrupt the surface to produce varying sheens. Using the 100 per cent UV counterpart, requires strict controls on the amount of film build applied. This was best achieved by roller coater application and not by spray application. A typical spray application would be 3 to 5 mils wet versus 0.2 to 0.8 mils by roller coater. The shrinkage of the film also allows for an open pore finish to be achieved.

The disadvantage of the WB-UV is the same as any WB. These are grain raising and wood wetting. Water-based coatings wets out the wood surface differently than their solvent counterparts. This results in differences in appearance of the colour or hue on species of woods. The grain raising can require an additional application when natural finishes are applied on porous woods such as oak versus a closed grain such as maple. The grain raising allows the resin to come into contact with a much larger surface area of the wooden substrate and thereby improves the overall adhesion.

DRYING

The challenge of any water-borne coating is to physically remove the water from the coating. Any retention of water after curing (exposure to uv lamps) will result in whitening of the film. Water has a much higher heat capacity than solvents used in conventional coatings and as such requires much more energy to evaporate. The rate of evaporation is strongly influenced by conditions such as relative humidity and for today's fast-paced production, relying on the weather is not an option. Equipment manufacturers have put considerable resources and focus into developing technology options that accelerate the time required to evaporate the water from the film. (1) The more conventional types of dryers would be linear jet air ovens with the addition of staggered infrared lamps. If space is at a premium, the layout

can be changed from linear to a vertical one. (2) A dehumidification oven that evaporates the water without utilizing heat is also available. This type of system is ideal for parts that are sensitive to heat. The forced air circulates through multi-stage filters to remove particulates and volatile organics. The water-laden air then passes through a dehumidifier. The dried air is then forced back into the oven and the cycle repeated. The air being ultra low in moisture then acts as a sponge pulling more water from the coating. (3) A more specialized drying system is one that uses micro-wave or radio wave technology. The electro magnetic field works on the asymmetrical shape of the water molecule and allows it to be heated evenly in a three-dimensional matrix. The excitation generated by the molecular structure of the water converts into the heat. This allows for a thorough evaporation of water before any skinning or surface drying occurs.

CHANGING REGULATORY LANDSCAPE

Water-borne UV coatings offer a significant advantage over existing conventional coatings. They allow manufacturers to meet environmental obligations and still offer a high performance product. The environmental obligations have become stricter over the years, driven by States such as California and there is no easing up as different jurisdictions introduce their own legislation.

In Canada, the lawmakers have not been as active as those in United States, but this is changing. Environment Canada has established VOC limits in the architectural and industrial maintenance sector and automotive recoating sector. The legislation is awaiting its final passage and is expected to be published mid-2009. The lowering of VOC used in coatings is aimed at improving the overall air quality to reduce the smog formation.

The Province of Ontario has put forth a framework for its Toxics Regulation. This will require establishments to report on the use of various chemicals that are labeled of concern and to establish reduction plans for these chemicals. As well, the Ministry of the Environment is also looking at establishing new standards for air emissions based on criteria of health and odour.

Municipalities such as the City of Toronto introduced its Right to Know bylaw, which will require establishments that use more than 100 kilograms of VOC to report it to a public domain. Their reportable limits are much lower than those under the existing NPRI (National Pollution Reportable Inventory). This is expected to create peer pressure at the community level to reduce the amount emitted and to change the activity.

Non-government agencies are also imposing their own standards for indoor air quality standards at residential and commercial sites. The emergence of LEEDS projects is construction is also creating a demand for coatings that meet their criteria. The influence of LEEDS can be seen on other standard setting agencies.

CONCLUSION

The pressure for friendlier coatings is not only being driven by regulatory demands but also by customer specifications. The more these considerations influence the coating decision process, the more attractive water borne uv-curable coatings will become as they can meet or exceed current performance of existing solvent based systems. ■

Frank Jossinet is employed at AkzoNobel Wood Coatings Port Hope ON.

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The company also offers the North American made T100C Tomcat conventional air spray gun. Features include: premium atomization technologies, heat treated stainless



usages by 30-50 per cent.

A recent testimonial for Can Am went like this, "I am returning one of the original Turbine Powered 2020 guns you sold to us 7 years



steel fluid tip, self adjusting needle packing and drop forged aluminum gun body. Lifetime limited warranty. Pressure feed or siphon feed. Can also be used with internal nozzles as well as carbide tipped fluid nozzles for abrasives. Inexpensive parts replacement.

DUX spray guns bring the global coatings application market a technology that exceeds transfer efficiency expectations while providing coating specialists the fin-



ish and productivity output they demand. Manufactured by DUX Area, Inc., Seahurst, Washington, DUX spray guns were first inspired by high-performance Formula race-car engine airflow designs.

DUX spray guns incorporate advanced laminar airflow technology. Featuring a single investment-cast aluminum body, smoothly curved internal chambers, and an ergonomic handle, DUX spray guns will help manufacturers reduce costs, improve finish quality and ensure a healthy work environment. With transfer efficiency improvements of 15 to 40 per cent over the best HVLP and other conventional spray technologies, and the lightest-weight design available,



DUX spray guns will revolutionize your painting process.

The DUX Pressure Feed gun is typically used in industrial environments where large quantities of the same coatings are sprayed throughout the day, this product receives both atomizing air and fluid through the base of the gun for better balance and ease of use.

DUX Gravity Feed is used when smaller quantities of coating or more frequent material changes are required, this version of the DUX spray gun is designed with a center mounted fluid cup and a shorter barrel than competing guns. This allows it to fit into tight spaces while maintaining a balanced and lightweight feel for the operator.

EXEL North America has launched a new line of M22 WBE HPA Air-spray guns. This new manual air-spray gun delivers high volume



pressure conventional spraying for fast dry water-based coatings, enamels, FRIT, mold release agents, buffing compounds and some water-based stains.

Potential target markets include appliance, range hoods, water heaters and all other interior metal



structures still using liquid coatings.

Features include: new gun body design for operator comfort, longer wear life with polyurethane needle tip & treated metal needle rod & nozzle, stainless Steel wetted parts and it is compatible with highly abrasive water-based materials.

EXEL North America's new line of M22 BasiK Manual Airspray guns replace the M21/2 guns, effective immediately. The M21 gun bodies are no longer available. The new M22 BasiK guns are in the field and have been performing very well.

Features include: HPA technology such as new aircaps for improved spraying, progressive fan adjustable knob, ergonomic handle for maximum comfort, very light trigger and available in three configurations - Gravity, Pressure, and Suction. They also have aluminum aircaps, stainless steel nozzles and excellent transfer efficiencies.

The Industrial Products Division of **Graco Canada Inc.** offers the NEW Pro Xs Electrostatic gun for Waterborne Coatings. The Pro Xs Waterborne gun is ideal for spraying waterborne materials in a circulation system - since the fluid remains grounded in the gun, there is no isolation system required for its operation. The Pro Xs Waterborne gun combines the benefits of material savings with what Craco says are the



ago. As you can see it has a few battle scars caused by being run over by a Bradley Tank, which in turn caused us to perform slight repairs to it in order for the air cap to screw on. This gun has painted at least 5,260 military vehicles and countless smaller parts with CARC paint. You may use this E-Mail and gun as proof of the durability of your 2020 guns.

Complete Spray Paint Equipment



in Mississauga, ON, has available the HB2020 electrostatic gun, which it says is the lightest 60KV electrostatic handgun in the world. This Japanese technology is CSA and FM approved and has been available in Canada since 2002. Sold to major automotive and industrial manufacturers. It has a high quality finish and transfer efficiency.



lightest spraying weight guns on the market. The Graco Pro Xs Waterborne gun is also available on Graco's Try Before You Buy program.

ITW Ransburg has available the Vector Solo Air-Assisted Airless Cordless Gun (Vector Solo AA), which combines air-assisted airless technology with proven atomization in a portable, cordless model.



With superior Ransburg electrostatics, this gun delivers advanced spray pattern characteristics, unmatched pattern adjustability and excellent transfer efficiency.

The Vector Solo AA's pattern adjustability allows the decrease of overall pattern size, improving accuracy and creating a uniform finish. The gun's cordless design and superior ergonomic balance improve operator comfort and lessen fatigue for an increase in productivity. And, the Gun's best-in class atomization reduces overspray and paint waste providing cost savings to help your bottom line.



The ITW Ransburg Vector Solo Cordless Gun delivers superior electrostatic technology in a user-friendly solvent or waterborne model. The Gun is not only easy to use, but provides best in class atomization and transfer efficiency. Designed with an ergonomic handle provides the operator proper grip and user comfort, making extended spray times easier with less fatigue, not to mention better control and uniform applications. The Solo Gun meets the customer's



demand for a robust, high efficiency paint applicator, without being tethered to a stationary power supply.

With **ITW Gema's** OptiFlex™, you've got all you need to power up your productivity...right in the palm of your hand! From the OptiSelect™ Gun to the OptiStar™ Con-



trol Unit and OptiFlow™ Pump, every component of the system is designed for total reliability, convenience, and performance. The result is always flexible and consistent high-quality coating of parts and products...with less effort, less operator training, and fewer things to go wrong all along the way.

ITW Industrial Finishing, manufacturers of DeVilbiss industrial spray finishing equipment, has recently introduced the Compact spray gun series that provide superior finish and high transfer efficiencies while optimizing energy savings through reduced air consumption. Using advanced Computational Fluid Dynamics, the innovative design is the result of extensive quantitative analysis and high performance modeling. Compact Trans-Tech, offering "green" energy savings technology in a robust, ultra light



spray gun that meets SQAMD Rule 1136 wood products coatings regulations when using compliant materials. Compact HVLP, offering EPA compliance and a superb finish for all types of solvent and waterborne materials. Compact Advanced Conventional, for ideal performance in small to high volume facilities.

Sata Canada of Calgary AB, offers SATAjet 1000 K, the featherweight among pressure fed spray guns, provides the finest material atomization at a high working speed. With the wide spray pattern and



ergonomic design, this gun has made a fatigue-free paint job possible, even on large jobs. It is suitable for both waterborne and solvent borne materials. Other features include: corrosion-resistant material passages made of stainless steel, high gloss nickel-plated surface and comfortable, ergonomically balanced handling of the control elements, such as flow control, round/flat spray, and integrated air micrometer. Available in color coded RP or HVLP technology.

Also, the highly efficient SATAjet 3000K spray gun is specially suited



for painting large surfaces. Equipped with the finest material atomization and a large spray pattern this gun achieves even better finishing results. Features include corrosion-resistant material passages made of stainless steel, high flexibility regarding spray pressure and distance, extremely sturdy construction with all control elements, such as material flow control, round/flat spray control, and air

micrometer, lying on the same axis. It can be retrofitted with the digital SATA adam and is available in both RP ("Super Speed") or HVLP ("Super Saver") Technologies.

Wagner PRIMA manual gun system is efficient and easy to use, utilizing patented control technology. The EPG-PRIMA control unit has a new design that is easy to read and operate and includes new additions recently added to make it even sim-



pler to use. The control unit features four preset recipes and simple to use single-hand control adjustment knobs. Whether you choose the PRIMA Airfluid unit or the PRIMA 60l hopper unit, the WAGNER PI-P1 powder injector delivers the powder smoothly and continuously from the container to the powder gun and is characterized by its low compressed air consumption. Wagner C4 generation of powder guns that feature an integrated high-voltage cascade complete the PRIMA system making it a powerful, yet simple system for manual powder coating projects.

Manual spray gun manufacturers have been listening to their customers. They have made the guns light and efficient and durable. There is a manual spray gun on the market to suit every need. Contact your local distributor. CFCMs online Buyers Guide can help. ■

Visit www.cfc.ca.

All effort was made to contact various manual spray gun manufacturers and distributors for this article. If the products you carry are available in Canada and were not included. Please contact us. You may always contribute a product photo and 50 to 100 word description for our new product section. E-mail the editor at sandra.anderson@cfc.ca

Keeping it Clean

By SANDRA ANDERSON

When it comes to stripping, all of the various methods – chemical, salt, heat and blasting – have their virtues. Stripping must be done, even in light of production demands. Some may consider it a “necessary evil” such as in articles written by James Malloy of Kolene on the subject. Every part of the coating process from pre-treatment to curing depends on proper and frequent stripping of the parts.

HEAT, BURN OFF METHOD

Cleaning or stripping fixtures and rejected parts in the finishing industry bring burn off ovens into play in certain circumstances.

Steve Moore, Sales Manager, Burn-Off Oven Products, Steelman Industries, Inc., designer and manufacturer of heat-cleaning ovens, Kilgore, TX, explains that heat-cleaning ovens differ from other stripping methods (chemical, fluidized sand beds/salt baths) in several ways, including:

- No exposure to caustic chemicals or problems and costs associated with disposal of chemicals or contaminated sand/salt.
- Limited manpower needed.

“Other methods may clean a few parts very quickly but require personnel to be directly involved at all times,” says Moore. “Ovens can clean hundreds or thousands of parts (depending on the size of the parts and of the oven) in a few short hours with personnel only needed for loading and unloading.”

Features of burn-off or heat-cleaning ovens can include top down heating or bottom-fired heating. Moore says heating from the top down will prevent damage to parts from being exposed to direct fire. “It also prevents the ‘short-circuiting’ of the process that is common in bottom-fired ovens; heat from the primary burner, located at the bottom, goes directly into the exhaust, located at the top,” he says.

When it comes to automatic process control, top-down heating allows for the use of two controlling thermocouples. One located at the top rear (hottest point) and another at the bottom front (coolest point). This allows the ovens’ control system to automatically adjust to the size of the load.

Burn off ovens use heavy-duty cast-iron burners. The burner chambers can be located outside of the oven to prevent damage by loading or unloading, or by falling parts. Ovens can be constructed on an angle-iron frame and a five-layer insulation system. Standard interior liners can be a perforated, aluminized, CRS. Other options can include solid aluminized or solid stainless interior liners.

Some ovens have rate control, which allows the oven control system to be “proactive” in preventing fires as opposed to reacting to a fire after it occurs. The system can monitor the “rate of rise” of the temperature in the oven and afterburner and automatically makes the necessary adjustments to the process to prevent fires.

MOLTEN SALT AND MID-TEMP ORGANIC

Malloy tells CFCM, “Our molten salt stripping for hooks is the only process that can strip hooks and racks on-line / real-time, providing clean racks every pass without having to remove them from the line.”

In a Kolene Salt Stripping story published in Parts Cleaning magazine July/August 1998, titled “A Salty Solution to Paint Stripping,” Jim Malloy, Vice-President - Technology for Kolene describes molten salt baths as a practical versatile method for stripping coatings for most metal



Roland Sanchez and Ron Pierce with the Pollution Control burn off oven during Coating West in Las Vegas.

parts. To be safe and effective in this process, equipment must be equipped for high temperatures and unique chemicals. There should be a system in place to collect and remove reaction byproducts formed during the cleaning. Equipment is usually constructed of mild steel. The salt bath furnace tends to be designed with double-walls.

Kolene specializes in two types of stripping processes (1) molten salt for maintenance stripping of hooks, racks, fixtures, and the like and (2) mid-temperature organic-based stripper for high-value reject components, e.g. aluminum auto wheels, galvanized and zinc pieces and parts.

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and labour intensive in some stripping cases. They contain granular sand or salt combined with 650°F heat to decompose the paint off the part. They can be fast and effective, but the machines are costly to buy and operate, and are not ideal for moving or complex parts.

For this molten salt stripping process to be incorporated in-line, and to function at normal line speeds, the stripping speed must be extremely fast. Time can be influenced by the thickness and type of coating being removed, the size etc. of items being stripped and the operating temperature of the bath.

Malloy says that for a single-pass cured coating measuring a few mils in thickness required stripping time is about 5 - 10 seconds at an operating temperature of 900 F.

When a cold part is immersed into the molten salt, a "cocoon" of solidified or frozen salt forms around the cold metal. As the metal heats up, the frozen salt dissolves and then the stripping reaction begins.

THE CHEMICAL SOLUTION

Other stripping methods include chemicals such as methylene chloride, the use of which has been

highly limited for the past six years due to Canadian government legislation. It is still however, the best, least expensive choice for an aluminum substrate.

Now in wider use are caustic, alkaline water-based strippers accelerated with heat or booster chemicals. Chemicals tend to be used only when the high temperature burn off method will ruin the object being stripped.

Stewart Tymchuk C.E.T. of Dynamix Inc., Markham, ON, explains that Dynamix specializes in both ambient and hot tank products for paint removal from ferrous and non-ferrous metal substrates. The company also manufactures electrolytic and electroless nickel strippers, as well as tin/tin alloy strippers.

"Dynamix doesn't just market the stripping chemistry, but also manufactures the proprietary chemicals used to produce the original coatings, providing first-hand knowledge on what needs to be removed and how best to accomplish the task," says Tymchuk.

"The metal finishing industry is demanding aqueous based strippers (chemical liquid) that are environmentally benign, while others

have adopted more expensive, less effective non chemical strippers," says Tymchuk.

He explains that Dynamix was approached by a company who sought to re-coat aluminum bake ware. "We formulated a hot tank aluminum-safe environmentally friendly product that removed the baked on residue and the worn out Teflon coating." Tymchuk adds, "The application of Dynastrip HT was very successful."

He says one gallon of a 70 to 90 per cent active methylene chloride ambient paint stripper can be replaced with a quarter gallon of a 70 to 90 per cent active methylene chloride alternative Dynastrip RT. Thus, 20 times as much methylene chloride must be used.

IT'S A BLAST

Blast stripping is not widely used in finishing due mainly to the cost.

It is however a chosen stripping or cleaning method in the aerospace industry, which tends to avoid harsh chemicals or heat. This stripping method also tends to be the most portable of the three for outdoor jobs.

STRIPPING AND THE ENVIRONMENT

When it comes to emissions from heat burn off methods, Moore speaks for all when he says, "Environmental requirements are becoming more difficult to meet."

All levels of government are pulling in the reigns when it comes to "unhealthy" emissions. There are ovens on the market that control the afterburner temperature at the half-second point to meet the most stringent environmental requirements.

Manufacturers have engineers who work closely with the customer to ensure the oven meets both federal and local emission guidelines. For example, Steelman recently designed an oven for a Canadian customer to remove chlorinated and fluorinated materials. This required a special afterburner to meet Ministry of Environment (MOE) requirements.

When it comes to new products, Moore says Steelman now offers an optional PLC control system. This system apparently offers better diagnostics, data logging, alarm and trend screens.

"The PLC system also has the capability to interface with the customers computer network for remote monitoring," says Moore.

When it comes to service, many heat-cleaning ovens can be serviced over the phone at no charge to the customer.

On the chemical side, Malloy says that when it comes to the environment, "Our chemistries are divided into inorganic salts (for the molten salt) and non-hazardous, non-HAPs organic fluids for the stripping of reject parts. Both chemical families are easily managed."

Another environmentally friendly method of paint stripping reject painted parts, with no base metal attack, aluminum and galvanized safe, involves adding an alkaline amine, fatty acid and a surfactant stripping composition to a tank, then immerse the part and heat it 300 degrees F for an hour. Cured paint is removed with no damage to the metal substrate.

Tymchuk of Dynamix says, "Our methylene chloride-free ambient paint removers are very popular. The major component in our Dynastrip RT is over 450 times less volatile than methylene chloride. We market an accelerator that finds application in hot tank coating removal, where the end user purchases their own commodity chemistry, thereby reducing their costs. Dynastrip Ni and EN-Ni are cyanide-free electrolytic and electroless nickel strippers that are used extensively. As well, Dynamix manufactures peroxide, fluoride and fluoborate-free tin/tin alloy strippers, plus non-chrome anodic coating strippers from aluminum." He adds, "Dynastrip RT is an ambient paint remover used primarily to strip paint hooks and small parts, where typically methylene chloride or burn-off methods were employed. Our product is quick, effective and environmentally friendly and unlike burn-off methods, will not adversely affect the mechanical properties of the hooks."

A noticeable trend within the industry is, "the continuing need to be able to strip high value reject parts to increase line yield and reduce costs," says Malloy.

Another trend as Tymchuk says is the demand for environmentally safe chemical liquids for stripping. Manufacturers are listening. The stripping/cleaning method used needs to be based on the thickness of the coating to be removed, the function of the part being stripped, what the part is made of, and most of all the return of the investment of time, cost and energy and bottom line based on the size of the job, turnaround time and other factors depending on the customers' needs. ■

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Nickel is Class

BY RALPH V. DIXON

When a manufacturer wants to up-grade the appearance, and give class to his product, the logical choice is nickel and chromium plating. Check out any first-class street rod and you will find acres of nickel plating. What made the world's classiest motorcycle number one? The same answer: Nickel and Chromium. Harley Davidson motorcycles would not be the same without bright nickel; "Nickel Is Class". I have used this theme for years when servicing top decorative electroplaters throughout North and South America, as well as Europe. Considering the "Flying Lady" adorning the hood of every Rolls Royce is attired in a nickel and chromium coating; is that not the ultimate in class?

NORTH AMERICAN MARKET PLACE

The majority of high quality nickel and chromium plating in North America today, is found in the following industries listed below, considerably less than the market of a few years ago:

- Automotive POP Trim
- Pick-Up and SUV Bumpers
- Aluminum Automotive Wheels
- Motorcycle Parts and Accessories
- Plumbing Fixtures
- Hinges and Hardware

NICKEL AND HEALTH ISSUES

Last year (2008) at SURFIN there was a session on health concerns of nickel plating. As usual this was a European generated issue where nickel sulfate and nickel chloride used by electroplaters was linked to one of the most dangerous nickel compounds, Nickel Carbonyl. This is sort of guilt by association, the effects of sulfate and chloride compounds were not really tested. Concerns of nickel handling and nickel misting can be reduced by use of eductors for solution agitation. Presently bath chemistry is maintained by using liquid nickel sulfate and nickel chloride. In liquid form they are pumped into the bath, requiring no operator contact. Modern day plating facilities are much cleaner and safer than those of



years ago. You will find most baths equipped with ventilation and scrubbers. Solution filtration systems are hard piped; contact with plating solutions has been minimized. In most facilities safety attire and equipment is mandatory. In my years of servicing nickel electroplating baths, I have performed in excess of 10,000 analysis and Hull cell test. Having associated with chemist and operators whose entire working career has involved handling nickel additives. Prior to OHSA, EPA and the safety standards of today, laboratory samples were pipetted by mouth, I have certainly tasted more than one sample of nickel solution. The most serious nickel related issues that I have witnessed have been nickel rash, usually occurring on the hands and forearms.

This is corrected by moving the employee to a different department. After a couple of weeks the rash subsides with no additional problems. Handling any type of chemistry can be dangerous; every safety precaution should be taken.

OPERATOR FRIENDLY

Nickel plating processes in use today are really trouble free. With the technology, service additives, and equipment available, problems are a thing of the past. We can easily analyze all components in a bath, both metallic and organic. With a TOC Analyzer (Total Organic Carbon) we are able to analyze total organics both good and bad. Armed with this information we may schedule purification treatments when needed, not by seasons or

guessing. Service additives are available that chleate metallic impurities, and reduce organic compounds, allowing production to continue until time is available for proper corrections. In addition to service additives, there is automatic purification equipment available that will reduce organics by passing the solution through UV light while injecting hydrogen peroxide. This will totally remove all organics. In addition to organic removal the equipment has the ability to convert sulfur to sulfate. This feature allows sulfur-laden drag-out solution to be returned to the semi-bright (sulfur free) bath. This in itself can save thousands of dollars in nickel salt consumption and waste treatment reduction. When used in conjunction with an atmospheric evaporator, the loop may be totally closed on the nickel-plating line.

NICKEL PLATING

The one area where metal finishing really has its act together is nickel plating. The industry has developed processes that offer high quality deposits with outstanding bright-

ness, leveling, and ductility, resulting in corrosion protection in excess of 100 hours of CASS testing. This is accomplished with chemistry that is free of operating problems and very operator friendly. Corrosion protection is achieved not only by nickel being a noble metal, but by the mechanics of the different layers that are applied.

CHEMISTRY

Nickel chemistry is based on the Watts formulation, nickel metal averaging 12.0 oz/gal., Nickel Sulfate 40.0 oz/gal., Nickel Chloride 12.0 oz/gal., and Boric Acid 6.0 oz/gal. Sulfate and chloride concentrations may vary to meet the specific needs of the operation. Where high conductivity is required, nickel chloride may be as high as 32.0 oz/gal., with nickel sulfate at 8.0 oz/gal. Boric Acid is used as a buffering agent, it also helps promote whiter deposits, and retards pitting. Secondary brightener additives fall into two categories, SAS and PPS derivative base. Both are capable of producing outstanding brightness and leveling. Both formulations use Sodium Saccharine as a primary additive, which aids in brightness and maintains ductility.

BATH PURITY

Bath purity is an absolute must if high quality deposits are expected. With TOC analysis we are now able to maintain these quality standards. A clean bright nickel bath will have the following TOC values: (see chart below)

TOC values may vary between vendor's baths. New chemistry should be very close to the above. As a bath ages, TOC will rise, the acceptable range being 20,000 to

BATH PURITY CHART		
New Watts Bath		TOC Value ppm
NiSO ₄	40.0 oz/gal.	0
NiCl ₂	12.0 oz/gal.	0
H ₃ BO ₃	6.0 oz/gal.	0
Secondary	0.2%	144
Primary	4.0%	2,590
Wetter	0.2%	40
Purifier	0.1%	48
Total TOC		3,122 ppm

PLATING AND ANODIZING: NICKEL PLATING

25,000 ppm; normally when a value of 30,000 ppm is reached, a purification treatment is recommended. Maintaining purity is accomplished by continuous filtration through activated carbon at a rate of 1 to 3 lbs. per 1,000 gallons of bath per 40 hours of production. Plate type filters that can be pre-coated with activated carbon and a filter aid are the most efficient.

Deposit Construction

Basis Material
Bright Acid Copper Deposit
Sulfur Free - Semi Bright Deposit
Hi Sulfur Strike Deposit
Bright Nickel Deposit
Microporous Deposit
Chromium Deposit

BASIS MATERIALS

This high quality market consists of automotive grills and trim

made of ABS or ABS-PC. Aluminum castings for automotive wheels and motorcycle engine components; steel for pick-up bumpers and motorcycle trim.

BRIGHT ACID COPPER

Used as a barrier layer for plastic to build brightness, and reduce stress due to the disparity between metal and plastic. Aluminum cast wheels have a zincate coating followed by a thick copper deposit that is buffed bright. Steel component are polished only.

SULFUR FREE NICKEL

Most brightener additives contain sulfur compounds; sulfur incorporated in nickel deposits promotes corrosion. The logical choice is to deposit a nickel base that is free of sulfur. Since this deposit is free of these compounds, it is not fully bright, also



known as the semi-bright layer. Leveling is less than a bright nickel deposit, ductility is greater.

HI SULFUR STRIKE

In producing a deposit that has cor-

rosion protection, the goal is to divert penetration in a corrosion cell from vertical to horizontal. This is exactly what the Hi Sulfur Strike accomplishes with a thickness of 0.050 μm .

BRIGHT NICKEL

This is the true decorative deposit, "making silk purses out of sows' ears". Bright nickel has the ability to produce brightness, leveling (filling in the valleys before the mountains) while offering good ductility, allowing parts to be flexed without having the deposit crack.

MICROPOROUS NICKEL

The microporous strike deposits a layer of nickel containing microsolsids, causing the chromium deposit to have in access of 150,000 pores / cm^2 . This phenomenon reduces the corrosive charge of one site by 150,000 times.

BRIGHT CHROMIUM

The final deposit is a layer of hexavalent chromium, which adds abrasion resistance and the pleasant blue cast that is the standard of the industry.

Bright nickel plating will always be around, it has an appeal that doesn't fade, from old parlor wood stoves, Rayo kerosene lamps, Mr. Ford's Model A's and today's Rolls Royce. "Nickel Is Class" ■

Ralph V. Dixon has been serving the metal finishing industry for the past 50 years in all phases, from technical field service to sales management with world-class suppliers, specializing in decorative nickel and chromium finishes to the appliance, automotive, and motorcycle industries. He is currently a consultant in the promotion of decorative plating processes in the United States, and South America with Basically Nickel Inc., East Berlin, PA.



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Testing Methods for Surface Finishing

In Surface Finishing, the testing we perform on our deposits and finishes is often required by specifications and standards. But, even if testing is not required, it is a good idea. Maintaining the quality “status-quo” can save jobs because customers won’t miss their timelines, not to mention the high quality surface finishing they have come to expect. Testing helps to control costs by maintaining high quality without wasting chemistry.

Analysis of any finishing solution is the first step in preventing finishing problems. Several tests are key to controlling problems before they happen.

VOLUMETRIC METHODS

Inorganic constituents make up the bulk of any finishing solution. Using an acid copper plating solution as an example: copper sulfate, sulfuric acid and the chloride concentrations are analyzed by simple titrations. Testing will verify that the components or constituents are in the range set by the chemical suppliers. If not, additions can be made to the plating bath. Volumetric methods include reactions of several different types: simple acid base, oxidation-reduction, complexing, and precipitation. The ease, speed and relatively low cost of volumetric methods make them the most widely, in-shop, testing used for the analysis for finishing solutions.

GRAVIMETRIC METHODS

The component(s) of interest is determined by separating it from other components of the sample by precipitation, volatilization, or electro-analytical techniques

In Surface Finishing, precipitation methods are the most widely used of the gravimetric methods. Chemistry is added to form a precipitate that is only slightly soluble. After the precipitate is filtered from solution, washed, and dried, it is weighed. Your finishing guild book can be used to find the non-metals/metals that are easily analyzed gravimetrically. Some common components analyzed by gravimetric methods include chloride, sulfate, carbonate, phosphate, gold, and silver.

After all of the inorganic constituents of interest have been analyzed we next need to know the concentrations of the organic components. Instrument based methods are the industry standard to give us the results we need to maintain the complete bath chemistry.

INSTRUMENTAL METHODS

Finding just the right instrument to analyze your plating solutions can be a difficult task. Is the analytical instrument capable of analyzing the substance you are looking for with precision, at the right price? Today’s instruments often have a computer in order to automatically sample, analyze, and record the results.

Analytical instruments used in the analysis of plating solutions can be categorized in four types: spectroscopic (based on the release of light), photometric (based on the absorption of light), chromatographic (based on the speed of the material through media/column) and electro-analytical (uses an electrical current during analysis).

Spectroscopic methods include X-ray fluorescence (used for metal analysis and thickness readings), mass spectrometry and inductively coupled plasma. The best known and most widely used of the photometric methods is Atomic Absorption.

Ion chromatography is the best known form of chromatographic method.

Because electro-analytical methods are based on the same principles as electroplating, this method is capable of offering insights into the mysteries of plating.

Chromatographic methods like High Pressure Liquid Chromatography (HPLC) are the preferred analysis for nickel brighteners. Different organic components or brighteners need different instrumentation methods. Cyclic Voltametric Stripping (CVS) instruments are being used to analyze organic components in acid copper baths, but only at the tank/in-house. In the time it takes to be shipped to your supplier’s laboratory they have changed enough to be meaningless. Hull Cell testing can also be used to determine the level of organic additives in plating baths,

We know the major organic and inorganic components of the finishing solution. Because the deposit composition can affect tensile strength, residual stress, ductility and electrical resistance we need to know our bath’s contaminants. So, we need to analyze the solution contaminants both metallic and organic. The metals can be analyzed using an Atomic Absorption (AA) spectrometer. But, for the organic contaminants we take another approach. It’s the Total Organic Carbon (TOC) – the total of the good and bad stuff we are interested in. By using an instrument that measures the total amount of organic carbon that is in our plating bath, we can determine the comparative age/status of our plating bath. By charting this over time we have a good indication if a plating bath requires a carbon treatment to clean up the tramp organics before we’re in trouble.

HULL CELL – A MAJOR TROUBLESHOOTING TOOL

The Hull Cell (a small model of your electroplating bath) can be used to predict the future health of your electroplating baths. A brand new plating bath and its beautiful deposits are like that new car smell. Over time things change, and without maintenance you are not going to get the same deposit. Hull Cells can be used in combination with chemical analysis to analyze all of the major constituents of the bath. Moreover and this is

huge, by making all the additions required by analysis to the Hull Cell before adding anything to the main bath, you can avoid making costly mistakes to your plating electrolyte.

While it’s true that Hull Cell analysis of a plating bath electrolyte is slightly more art than science, with a little practice it will pay big dividends. Key to using a Hull Cell is correctly interpreting the appearance of the test plate and how this relates to the condition of the electroplating bath.

MEASURING PLATING/COATING THICKNESS

Thickness has a tremendous influence over the results of our final product/deposit. A thin deposit can have a negative influence on corrosion protection, wear resistance and micro-hardness. Thick deposits can negatively affect the properties of the part by imparting high stress and dimensional changes.

There are five basic methods used to determine coating/deposit thickness.

Those methods are:

1. X-Ray fluorescence
2. Beta backscatter
3. Eddy-current
4. Magnetic induction
5. Cross sectioning/Microscopic Thickness Testing

These methods are individually suited to a specific set of coating(s)/deposits over specific substrates. Remember that geometry (of the part and

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the probe to the part) must be taken into account to consistently get the right thickness readings. Let's look at each system and the applications best suited for each.

X-RAY FLUORESCENCE

Over most commercial thickness ranges, x-ray fluorescence proves to be the most accurate measurement method. X-rays can be focused on extremely small areas making it the method of choice for small-diameter parts.

When metals are subjected to x-ray bombardment of a known energy, some of the metal's electrons will gain energy and move to a shell of higher energy. When the electrons fall back to the vacated and stable shell they release a photon of x-ray energy unique to every metal. This release of energy by the fall back electron is known as fluorescence.

The wavelength/energy of the fluorescent x-rays is proportional to the atomic number of the metal element and is uniquely characteristic for that particular element. The number of x-rays released will be proportional to the thickness of the metal (corrected for its density) being measured.

BETA BACKSCATTER

Beta is used to measure single metal coatings and anodic coatings. Beta backscatter is very accurate when measuring very thin gold deposits. Beta rays are electrons emitted from unstable radioactive isotopes of an element (like Carbon 14 or Strontium 90). When a tightly directed beta source impacts a plated sample (gold over nickel) the electrons will penetrate the plating material and be reflected/scattered backwards toward the source. The electrons are then counted by a Geiger-Mueller tube and converted into a coating thickness. Accurate measurements can only be obtained if the coating metals atomic number is sufficiently greater or lesser than (at least four atomic numbers) the atomic number of the base metal. So, it can not be used to measure nickel over a copper base.

EDDY-CURRENT

Eddy-current techniques are excellent for measuring both non-magnetic (paints, e-coats, powder

TABLE 1

Coatings	Method				
	X-ray	Beta Backscatter	Eddy Current	Magnetic Induction	Microscopic
Anodic Coatings		X	X		X
Cadmium	X	X	X	X	X
Chromium	X	X	X	X	X
Copper	X	X	X	X	X
Electro-coat			X	X	
Electroless Deposits	X			X	X
Gold	X	X			X
Nickel	X		X	X	X
Paints			X	X	
Powder coatings			X	X	
Tin Lead	X	X			X
Zinc	X	X	X	X	X

coatings) and metallic coatings (cadmium, copper, zinc, etc.) over steel. Eddy-current can also measure non-conductive coatings (paints, e-coats, and powder coatings) over non-ferrous metals such as copper or anodized aluminum. Changes in the probe circuitry from the eddy-currents generated when a conductive material is subjected to an AC magnetic field from a probe are used to give a thickness.

Non-conductive coatings cause a gap/separation between the probe and the base material. The loss in eddy current produced by this gap is compared to a standard measured directly on the base material to determine coating thickness.

MAGNETIC INDUCTION

The Magnetic Induction principle is used for measuring the thickness of a non-magnetic coating (zinc, cadmium, paint, powder coating, etc.) over a steel/magnetic substrate.

Eddy-current and Magnetic Induction methods can be combined in a single probe/instrument.

CROSS SECTIONING/MICROSCOPIC THICKNESS TESTING

In Microscopic Thickness Testing, the deposit thickness is measured by enlarging the cross-sectioned image of the coating. Good metallographic procedures are the key to getting correct readings. Mounting, polishing and etching must all be done accurately or errors can accumulate. Results are very operator-dependent. At one time cross-sectioning was the "referee" test for deposit thickness. But, inconsistent results have caused some organizations (ISO and ASTM) to withdraw Microscopic Thickness Testing as the "referee" test.

To determine which measurement method is best suited to a particular coating, refer to Table 1 and talk to your Supplier about your special needs. Where multiple methods work, your final decision would be determined by other factors, such as the price, part size/shape and accuracy requirements. An important point to remember is that for any given application one method may not be more accurate than any other method. For instance, just because an x-ray fluorescence unit with more bells and whistles and costs more doesn't mean that it is more accurate than beta backscatter system (depending on your particular application).

ADHESION TESTS

Adhesion tests can run from a simple tape test to very advanced quantitative tests: Ollard, Plug, and

Ring Shear, which can reproduce results to about 5 percent.

SALT SPRAY TESTING

ASTM B 117 "Standard Practice for Operating Salt Spray (Fog) Apparatus" is the most widely used form of corrosion testing for protective coatings. In use for over 90 years as an accelerated test in order to ascertain the degree of protection offered by a given system for either/or both inorganic and organic coatings on a metallic substrate. Testing can range from as little as 4 hours to over 10,000 hours, depending on the coating or finish tested.

Salt spray testing has few problems (which is why it is now a Standard Practice) when you are trying to rank the corrosion performance of more than one coating. Simply, every cabinet is different, so results can vary.

Accelerated test methods do not accurately reproduce corrosion performance for coatings because the cabinets do not accurately reproduce the conditions in the real world. But, this family of testing methods can prove invaluable in testing and maintaining your process lines. A small change in hours/appearance can alert you to problems in your process well before you have major problems.

TABER ABRASION/WEAR RESISTANCE

The Taber Abraser Test can be used to measure wear resistance of metallic and anodic coatings. I find that engineering applications most often require wear testing. The test panels rotate while the weighted wheels turn and provide a consistent rubbing action. After testing, the panels can be examined visually and by weight loss. You can test many different coatings/deposits because the Taber machine comes with a wide range of wheels and weights.

Quality/testing has many functions in the surface finishing business. One of its functions is to provide feedback that expands thinking and encourages evaluation of developing testing technologies for the finishing industry, as possible solutions to challenging quality problems. Our industry has had to emphasize a commitment to achieving our customers' needs and satisfaction on an ongoing basis. To accomplish this goal, we have been adding more testing as part of a continual improvement program. Ever-increasing testing has been adopted to ensure the processing and shipment of conforming products to our customers. ■

Basically Nickel Inc.

Ralph V. Dixon
Decorative Plating Consultant

Basically Nickel Inc.

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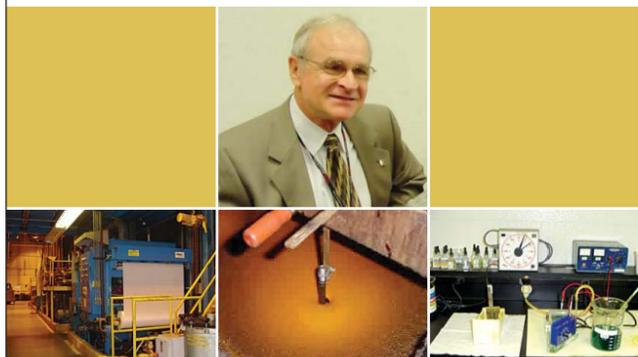
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www.datacolor.com, www.prisminstrumnets.com

New from Sartomer

Global specialty chemicals manufacturer Sartomer Company, Exton, PA, introduces CD262 – a new, less volatile, liquid-form, alkyl dimethacrylate monomer for peroxide-cure applications in coatings, composites, elastomers, adhesives, sealants and polymer modification.

CD262 is a low viscosity, low volatility, hydrophobic monomer that provides a good combination of fast cure, hardness and flexibility when used in free radical polymerization. It also improves water resistance and surface cure characteristics.

The company also introduces a line of acrylate oligomers for photovoltaic (PV) applications. Based on polybutadiene or hydrogenated polybutadiene, Sartomer's oligomers are ideally suited as formulation ingredients for PV barrier coatings, sealants, adhesives, dielectrics, and encapsulents. Sartomer oligomers offer good oxygen, moisture and chemical resistance, and will yield films that are flexible and have low Tg. Hydrogenated products offer the additional benefit of color and physical property stability against light and environmental degradation.

CN307, CN308, CN309, and CN9014 oligomers are currently commercially available; additional products will be released soon.

www.sartomer.com

DSM launches a new powder coating resin for low temperature curing

DSM Powder Coating Resins has launched a new powder coating resin for low temperature curing under the name Uralac EasyCure with Primid crosslinkers. This resin combines a number of properties including excellent flow, non-blooming, durability, lower curing time and lower energy and formulation cost.

UralacEasyCure has been developed to solve two major drawbacks typically associated with low temperature curing powder coating resins—poor appearance and blooming. Curing at a low temperature with Uralac EasyCure addresses this problem of surface appearance by providing improved flow and non-blooming even on darker colors. Additionally, the new product yields curing and formulation cost savings, the company said.

www.dsm.com

Penetrating Stain Repellents

Dow Corning Corp. announced the expansion of its stain- and water-repellent product line with the introduction of Dow Corning® 6706W and 6707W penetrating stain repellents. The products are water-based fluorosilane post-treatments that provide effective, environmentally sound water and oil repellency to porous construction materials such as concrete, natural stone, pavers, mortar, and grout.

The company says the products are UV stable, and allow the substrate to retain water-vapor permeability and their original appearance, while reducing dirt pick-up and contributing to easier cleaning.

The small molecular size of the stain repellents facilitates penetration into the surface, where the repellents chemically bond to most construction substrates, the company says. The resulting layer of hydrophobic protection reduces water absorption and the damage that can occur due to freeze-thaw cycles. The 6706W repellent is a ready-to-use product; the 6707W repellent is a concentrate that can be diluted with soft water. Both products are solvent-free and will not damage glass, metal, wood, or most plastics.

www.dowcorning.com.

New Paint Tinting System

BASF introduced PureOptions, a point-of-sale paint-tinting system that can be used to produce a range of paint colors with low odor and zero volatile organic compound (VOC) content as measured in accordance with U.S. EPA

Method 24.

The colorants are formulated to retain optimal paint performance properties such as gloss, color reproducibility, and blocking resistance without the addition of VOCs, the company says. The products also contain no alkylphenol ethoxylates (APEOs), which are considered environmentally detrimental. The colorants are reported to be produced using the same processes as the company's other colorant products. The company says retailers will be able to use the colorants with most current in-store tinting systems, and says it has developed a patent-pending plastic container with a resealable lid for efficient transfer of the zero-VOC colorants into point-of-sale dispensers. The container is designed to reduce the chances of contamination or spillage.

www.basf.com/usa

Announcing the NEW PosiTest Automatic Adhesion Tester



DeFelsko Corporation offers the new PosiTest AT-A Automatic Adhesion Tester that measures adhesion of coatings to metal, wood, concrete and other rigid substrates and now features an

electronically controlled hydraulic pump. The new electric pump applies smooth and continuous pull-off pressure at user-selectable rates.

The PosiTest AT-A makes adhesion testing even easier. Now, you can test adhesion strength with the simple push of a button. No twisting, pumping or cranking required.

New features include electronically controlled hydraulic pump, user selectable pull rates for complying with a variety of international test methods, built-in rechargeable batteries, convenient shoulder strap and AC power. Full digital keypad allows the operator to easily select dolly sizes, specify pull rate, change measurement units or store readings with the touch of a button.

Additionally, the PosiTest AT Manual Adhesion Tester is available. The manual hydraulic pump was designed to apply smooth and continuous pressure with a single stroke. The pull rate indicator allows the operator to manually monitor and adjust the rate of pull.

www.defelsko.com

Robust Thermoplastic Bag Filters From Pure Extruded Thermoplastics

WARCO glass-free Polypropylene (PP) and Polyvinylidene Fluoride (PVDF) bag filter vessels are constructed from SOLID fusion welded thermoplastics. Glass-reinforced molded PP filter housings can be attacked and permeated by corrosive chemicals (e.g., caustics, chlorides, fluorides, bromides, etc.) from etching and wicking of the glass fibers. PVC and CPVC housings are susceptible to inconsistent glue welding. WARCO filter vessels are constructed of robust pure PP or PVDF for maximum chemical and temperature resistance. Lengths include 15", 30", 40" and 60", single or multiplex. Accept standard felt bags, absolute rated pleated elements, pre-charged oil absorption bags and granular carbon bags.

Visit Warco/Warrender, Ltd. at the Sur/Fin 2009 show located at the Kentucky International Convention Center June 15-17th, 2009 - booth number #506.

Airspray and Super Vortex Spraymium® Electrostatic Spray gun



SAMES by EXEL is pleased to announce the release of the new Airspray and Super Vortex Spraymium® Electrostatic Spray gun. The Airmix® Spraymium® Electrostatic Spray gun version is coming soon!

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Single Coat, Primerless Heat Seal Solution



Michem® Flex HS-100 is a self-priming heat seal coating that can be applied directly to a wide variety of stock and untreated films using only corona, plasma or flame pre-treatment. A converter with a single coating station and a supply of Michem Flex HS-100 can produce heat sealable films according to

"just-in-time" needs.

It features a very low seal initiation temperature (SIT) and a broad heat seal temperature range with high hot tack throughout the range. Low SIT allows faster packaging speeds and lower energy consumption, while a broad temperature range is more forgiving of fluctuations in jaw temperature and pressure.

Michem Flex has the ability to seal to itself from a low temperature of 60° C all the way to above the melting point of polypropylene. This allows it to be used with a wider variety of substrates with low or high melting points.

Requiring just 1-2 dry microns of coating, Michem Flex HS-100 dries quickly, and keeps material costs low. It has been tested on a wide variety of films including BOPP, BOPET, BOPA, Cellulose, and PLA and offers excellent adhesion without the need for a separate primer coating. It produces a clear and transparent finish, and is food contact compliant.

www.michelman.com

Bayer MaterialScience highlights two-component waterborne polyurethane coatings for concrete flooring and UV cure resins

Traditionally, contractors have used solventborne polyurethane coatings when sealing concrete floors. But there is a more environmentally friendly alternative: two-component waterborne (2K WB) polyurethane high-performance coatings formulated with Bayhydrol® and Bayhydrol® UV resins from Bayer MaterialScience LLC. These coatings have properties that are similar to solventborne coatings, but contain ultra-low volatile organic compounds (VOCs).

The coatings products are odorless, UV light stable for resistance to weathering, non-yellowing, and hot-tire resistant. The coatings are also highly chemical resistant, a feature that may make them appropriate for use in anti-graffiti wall coatings, according to new research.

Also, Bayer MaterialScience LLC's one-component waterborne ultraviolet (UV) resins, including Bayhydrol® UV resin, enable polyurethane coatings for floors that utilize the fastest cure technology for on-site flooring applications.

Applying UV-cured polyurethane coatings on-site is a newer application for this technology.

Contractors can use a variety of methods for UV curing, including exposure to natural sunlight, full-spectrum UV bulbs and QUV-A bulbs. In addition to offering a fast turnaround, UV-curable polyurethane coatings feature a number of other beneficial properties: they are odorless, UV light stable for resistance to weathering, non-yellowing, abrasion resistant and chemical resistant.

www.bayermaterialscienceNAFTA.com.

AkzoNobel Introduces Ora Verde™: Italian High Performance Meets North American Ingenuity

AkzoNobel Wood Coatings North America introduces Ora Verde™, the first full line of urethanes based on European technology produced in North America. The Ora Verde™ product line enhances AkzoNobel's Chemcraft® portfolio of premium industrial wood coatings.

Following AkzoNobel's acquisition of Chemcraft in 2007, North American chemists began a collaborative project with their Italian AkzoNobel colleagues to develop new formulations that would comply with the North American environmental and regulatory standards.

All Ora Verde™ products will be manufactured in North America and each of the formulations has been tested by current users of popular European brands to ensure superior quality. Benefits include faster drying times, superior chemical resistance, and an easier to use one-to-one mixing ratio. The products will be available nationally through the Chemcraft distribution network. Technical support and training are also readily available.

The new urethane line includes five new finishes. In continuing AkzoNobel's commitment to develop sustainable products, three of the five new products carry the new Eco-Friendly logo that can be found on all Chemcraft products that meet or exceed existing environmental standards.

The Ora Verde™ product line includes:

- Verde Chiaro – ultra clear polyurethane
- Verde Bianco – pigmented series, high solid primers and topcoats
- Verde Acriloco – crystal clear acrylic polyurethane
- Verde Poliester – high build polyester sealer
- Verde Tinto – water based stains that allow intermixing to desired transparent colors, available in spray and wipe.

For more information on the Ora Verde™ finishing line or to find your local distributor, visit our website at www.chemcraft.com.

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AD INDEX

Akzo Nobel/Chemcraft	5	Fischer Technology	19
Basically Nickel Inc.	20	Global Finishing	4
Bowers Process Equipment	9	Henkel Canada Corporation 24/OBC	
CFS Canadian Finishing Systems Ltd.	15	ICA North America	12
CONN Blades	10	L.V. Lomas Limited	11
DeFelsko Corporation	7	Shercon	2
Dynamix Inc.	16	SURFIN	18

CALENDAR OF INDUSTRY EVENTS 2009

May 18-22: "Introduction to Paint Formulation," held in Rolla, Missouri, USA, <http://coatings.mst.edu>.

April 22 - 25: PROTEX, Specialist Trade Fair for Safety at Work and Modern Work Clothing, Exhibition Center Salzburg, Austria, Organizer H & K Messe GmbH & Co. KG, www.protex-messe.at.

June 2: Annual Paint Industry Golf Tournament, Glen Eagle Golf Club in Bolton, 1pm start, info@toscot.org

June 2-4: COATING PROCESS FUNDAMENTALS SHORT COURSE, University of Minnesota; Minneapolis, MN, www.cce.umn.edu/coatingprocess.

June 16-17: SUR/FIN 2009 in Louisville, Kentucky, www.nasf.org.

June 16 - 18: MechatronIX, International Trade Fair for Progressive Product Development through Mechatronics, Exhibition Center, Augsburg, Germany, Organizer: fairXperts GmbH, www.mechatronix-expo.de.

June 23-25: EuroLITE, International Trade Fair for Lightweight Design, Exhibition Center Salzburg, Austria, Organizer: H & K Messe GmbH & Co. KG, Messezentrum Salzburg, www.euroLITE-expo.eu.

July 15-16: Latin American Coatings Show 2009, World Trade Center, Mexico City, www.latinamericancoatingsshow.com

September 13-15: Southern Metal Finishing Conference, Charleston, SC, info@southernmetalfinishing.com

September 19-22: CPCA 2009 Annual Convention is in Niagara Falls, www.cdnpaint.org.

September 24-26: Woodworking Machinery & Supply Expo, International Centre, Toronto, ON, www.woodworkingexpo.ca.

September 30-October 1: Coating East 2009 at Gaylord Opryland in Nashville, TN. The event will target Automotive, Appliance, Heat Sensitive Substrates (wood & plastic) and General Metals. www.thecoatingsshow.com.

October 20 - 22: Parts2clean 2009, International Leading Trade Fair for Cleaning within the Production Process, Exhibition Center Stuttgart, Germany, Organizer: fairXperts GmbH, www.parts2clean.com. Running concurrently is Corosave, the international trade fair for corrosion protection, preservation and packaging, www.corosave.de.

October 29 - 30: TOSCAT Technical Symposium, Crowne Plaza Casino Hotel at Niagara Falls - Fallsview, info@toscot.org

November 3 - 5: DriveIT, International Congress and Exhibition for Automotive Software and Electronics, Exhibition Center Stuttgart, Germany, Organizer: H & K Messe GmbH & Co. KG, www.drive-it-expo.de.

2010

April 13 - 16, 2010: PaintExpo, International Leading Trade Fair for Industrial Coating Technology, Exhibition Center Karlsruhe, Germany, Organizer: FairFair GmbH, www.paintexpo.de.

April 12-15, 2010: American Coatings Show and Conference, Charlotte, NC, www.american-coatings-show.com.

June 2009

Metal Finishing Show Issue

Show Issue: Bonus Circulation

from our booth at
SUR/FIN 2009 June 16-17
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