

consumables

Tiny margins drive chemistry R&D

R&D for press chemicals is looking into "better" – better for people to work with, better to the environment and better on the bottom line, as several suppliers and manufacturers told Samantha Schelling.



Unless you live under a giant lump of igneous rock, you'd be aware — if not experiencing — that printing industry margins are pushed.

John Shallvey, national sales and marketing manager for Hurst Graphics Australia Pty Ltd, says that situation has shaped R&D into press chemistry.

One expression of that, says Jason Kent, national sales manager of GSB Chemical Pty Ltd, is a strong interest in savings. "When we start talking about recycling blanket washes," Kent says, "that's something which is very interesting for printers."

Shallvey continues, "I think the industry is now focused on margin and return, and if the chemicals that are used can contribute to the bottom line by efficiency in use and responsibility in OH&S and the environment, they will help let the potential of the presses be realised."

Low margins are making the industry ultra-competitive, resulting in two issues. "Firstly, maximum output in production time to control costs, and being able to keep downtime, caused by trouble, to an absolute minimum. Secondly, when you consider the huge investment in presses that can run at 15,000 per hour, achieving those production speeds can only be done by quality consumables on a well-maintained press.

"Presses, especially the rubber surfaces such as blankets and rollers, need to be well maintained and preserved to allow for proper press performance. Replacement costs are huge, the effect on quality unquestionable and downtime costs a disaster for the bottom line."

He picks up a point Grant Churchill, managing director of AE Hudson, sees at the top of the pile. "The quantum leap in press speeds," Shallvey says, "has seen the average doubling in the past 20 years. This means many of the old methods — inks, plates, blankets and fountain solution — just will not cut it, and we have seen many of the products I grew up with now gone."

In such cost-price-squeezed times, the huge capital investments in presses has perhaps squeezed more focus on their care. Grant Churchill says, "In chemistry, we have noticed that people have moved away from using cheap washes and are becoming more conscious of looking after their presses. They're a little more conscious of looking after their workers too, so they are using more chemistry that has moved away from the old petrochemical-type washes. Really, I think it is in line with investment in presses that has increased and there's more a focus on maintaining those high-value items."

Often, this is linked to chemical suitability for a press.

Graham McKenzie, chief executive of DS Chemport, says chemicals "must be consistent in quality, cost effective, low in toxicity, have no impact, and be safe to operators and the environment, be recyclable, if possible, be suitable for the printing machine, in respect to corrosiveness and chemical attack, and ideally have press manufacturer approvals."

Kent says environmental concerns are "still something very much in the customer's mind", thinking that's echoed by Paul Jackson, managing director of Applied Pressroom Technologies.

Jackson says, "Environmental issues are one of the things we always focus on. Even the EPA now is requesting all printers to recycle their rags and wash and clean their rags."

McKenzie says inferior chemistry can cause a multiplicity of issues and problems, including substandard print quality, extra downtime increasing costs, increased paper and ink waste, damage to blankets, rollers and press corrosion, danger to operators due to the wrong (not recommended) raw materials being used, conditions such as dermatitis and other skin complaints and danger to the environment, either by evaporation — high VOCs (volatile organic compounds) — and sewerage disposal.

"In summary, inferior chemistry can increase the printer's cost significantly and create major personnel and environmental risks."

Brent Stephen, of Day International's Chemical Products Division, which manufactures Varn Press Chemistry, agrees. "The industry is interested in quality products that improve productivity, chemicals that do not harm printers' investment in equipment, and are safer to use.

"The cost of chemicals to the printer is relatively small and inappropriate products in most cases reduce productivity, therefore becoming a more expensive option. The cost of waste removal has some printers interested in recycling press washes.

"Reducing IPA [isopropyl alcohol] as an additive to press fountain solutions has been an objective for some and will continue to be a talking point."

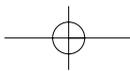
Allan Roberts, director of Prolith International Pty Ltd, picks up on Stephen's last point, adding that alongside worker and environment safety, price rises have had an impact. "Alcohol prices are continually going up, and there were some fairly substantial increases in the last quarter, which was said to be due to the Iraq war." (Most of Australia's alcohol is imported from America and Asia.)

"Occupational health and safety is trying to get rid of IPAs, so there is a very slow trend to using nonflammable materials. They're available, we have them, but there is resistance from the printer because it dries much slower and costs more."

He says some printers won't use flammable materials, one such group being quick printers because they're often in buildings with offices, so they don't want volatile chemicals translocating through ducting.

R&D

Kent says, "Chemistry R&D is continuing to go down the path of safer products,



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products that are going to be more environmentally friendly.”

Churchill cites R&D is into chemistry that is more water miscible, has higher flash points and lower flammability. “That’s from a safety point of view. And products that are less aromatic as well. A mix between low aromatic and safer, is the ideal place to be.” This is because many “safer” products actually smell stronger.

McKenzie says DS Chemport has been working on some improved environmentally friendly washes, aiming to lower toxicity levels, such as IPAs. “We are also looking seriously at recycling products, if that is possible and economical. We are doing a lot of recycle containers now, supplying in bulk, then recycling and saving container usage, which is obviously a big factor in landfill.

“The main focuses are health and safety issues and the environment.” Those issues, says McKenzie, are being driven internally.

“We are very conscious of what we do in our own factory, continually looking at what the health issues are for our own staff making chemicals. If there is anything dangerous for us actually making them, we would be silly to be selling them in the market.”

Like McKenzie, Roberts says R&D is continually looking at reducing IPAs. “Some printers don’t consider alcohol a very good product to use because of its flammability; now what they are trying to do is eliminate it by using substitutes. They have done this successfully in America, to a degree, but a substitute is not that popular in Europe.”

And, says Roberts, substitutes don’t seem to be easily used on every press. “You can have two presses, say Heidelberg 102s, in different shops — one can run virtually with no alcohol, the other one can’t.

“With lithography, there are so many variables that it could be a number of things, but it could also be a psychological thing. For example, the printer may be so used to using alcohol that as far as he is concerned he can’t do without it.”

Jackson says APT is concentrating on providing better products for the environment. One example is an alcohol-reducing fountain solution, which enables 50 per cent alcohol reduction, cutting VOCs in the workplace. Another is a hydro wash, which, after having water added, can be flushed down the drain.

“That has a very high flash point, so it is not a dangerous good, and means

you are reducing your VOC again. So we are concentrating on products of that nature.”

Jackson says in the past month, APT has done at least one trial a week on the alcohol-reducing fountain solution. “Printers are obviously interested and looking towards reducing IPA in their workplace and most of the printers we have done trials with have reduced it by 70 per cent, and their ink use has reduced between 20 and 30 per cent.”

Jackson says it’s no longer just the large or medium printers looking at these trials. “People of all levels in the printing game are looking at ways to provide a healthier environment, which I think is important anyway.”

Stephen picks up McKenzie’s earlier comment. “Press chemistry R&D is constantly looking at more efficient, safer, cost-effective raw materials that will provide the best value for the printer and meet the requirements of press manufacturers. As our customers are striving for quality and competitiveness, this requirement drives the development of products that work in harmony with other consumables.”

Shallvey says, “The other topic that has us interested is plate-care chemistry for CtP plates. Certainly, there is no one product that can cater for thermal, polymer and halide technology, so we keep working on it — with excellent results.”

Along with its CtP project, Hurst has taken a good look at UV wash technology, coming up with two products with a better occupational health and safety profile, in a low-odour formulation.

John Shallvey says, “The fountain solution issues are interesting, and I think the choices offered are now satisfying what ‘rings the user’s bells’. Giving the printer protection in an anti-calcium formulation or superior drying and bindery throughput is one reason we have five different sheetfed products.

“Preferable to the IPA discussion is, I think, trouble and waste-free printing. Yes, we watch IPA reduction and elimination programmes and have products to suit, but when you talk to the printers, addressing comments about keeping downtime to an absolute minimum and keeping up production speeds are more relevant in giving them margins they can live with.”

New product areas

Hurst is working in a myriad areas, with several new products. These include two UV

washes (one red, one non-red diamond), and washes that can be easily recycled in some of the modern technology. It has consolidated its IPA-free for heatset web and sheetfed presses, an anti-calcium fount for sheetfed, and its CtP plate project.

Prolith International is trialling alcohol substitutes for lithography.

GSB Chemical recently launched a low-odour UV wash, which is now Fogra approved for automatic systems. It also has an approved product for Technotrans Ecoclean recycling systems.

“This unique recycling system,” Jason Kent says, “separates the wash out after it has been used, allowing printers to reuse it. The end result for the customer is that they can basically reclaim up to 70 or 80 per cent of their blanket wash. They have taken off in Europe, but in Australia, are a little slower to get going, probably because it’s a smaller market and harder for some customers to justify the initial cost of the unit offset against what they spend on blanket wash. It’s generally for web printers with high volumes of washing.

“The units are fairly expensive to purchase in their own right but I think it is something that is definitely going to become more and more prevalent in the marketplace.”

Along with that, GSB launched a new range of press sundries, including improved plate cleaners and gum washout, and added a new range of aerosols, which the company hasn’t carried before.

Effective from June 1, Applied Pressroom Technologies is the agent for rollers from Thorndon Rubber Pty Ltd, a NZ company that has been in the Australian market for eight years.

Brent Stephen says, “As part of the Day International Image Transfer Group, the combination of Varn press chemistry and dayGraphica blankets has developed products that are ‘matched’ for various applications.” New products include a sheetfed fount that improves ink drying and a recyclable wash for Technotrans Ecoclean Systems.

Allan Roberts says Prolith International’s major recent product is a combined fountain solution and alcohol, giving the advantage of using one solution instead of two. “It does mean printers can normally run with less water on the press, which results in a cleaner dot, giving the colours a sharper and brighter look. It’s also more cost effective because of various price increases recently.”

