

Blog Post

Going solvent-free: Tapping into the benefits of alternative inks

By Eric Dejean, Product Manager, Water Based Products, Europe at Sun Chemical

“Revolutionary new solutions are now delivering comparable performance and output to their solvent-based counterparts in many applications.”

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Flexible packaging has been the fastest growing sector in the packaging industry for the past ten years. This has largely been driven by increased consumer demand for convenience and sustainability, with market indicators suggesting that this rapid development is likely to continue for some time to come. Indeed, Smithers Pira forecasts that global demand for flexible packaging will continue to grow annually by around 3% reaching a value of \$248 billion by 2020¹.

In general, solvent-based inks dominate flexible packaging, where its mature, proven ink technology continues to deliver on performance, productivity, versatility and quality across a wide range of applications and substrates. However, there are circumstances where printers are looking at alternative ink platforms that don't contain such high levels of Volatile Organic Compounds (VOCs), but will provide the same quality of output and productivity.

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Intense competition in the market is driving many printers to consider cost and production efficiencies to ensure they maximise output at minimal cost. This in particular is becoming more of an issue in face of falling production runs and an increase in demand for shorter, personalised and bespoke packaging requirements. Where solvent-based inks are used, printers have to factor in all the additional costs associated with risk management and controlling the emissions of potentially harmful substances to ensure a safe and healthy working environment – time and money that could be invested more productively elsewhere.

Equally challenging is the increasingly strict health and safety and environmental regulations as well as the issue of sustainability, with more and more national and international governments adopting environmental regulations, which specifically address the content and composition of ink solutions. As a result, many brand owners are looking to suppliers that have a proven commitment to their workforce and the environment.

The good news for the industry is that there is a wide range of alternative, solvent-free ink platforms that offer viable options depending on application, equipment and specific requirement in the form of a whole range of water-based solutions. In the past, it may have been the case that the older original water-based inks lacked the ability to provide acceptable print quality, but today the picture is very different. Revolutionary new solutions based on aqueous ink chemistry are now delivering comparable performance and output to their solvent-based counterparts in many applications.

Conventional water-based inks, such as our Aqualam range, have already gained good market share and are proving to be the 'go-to' ink solutions especially for lamination applications. Ease of use has also added to their attraction, as these inks can be used successfully on existing presses where there is the capability to introduce increased airflow for drying at higher production speeds.

Advances in the development of new alternative ink platforms and curing technologies have also seen the introduction of hybrid ink solutions combining water-based platforms with Electron Beam (EB) curing technologies. WetFlex® is Sun Chemical's technically-advanced flexible packaging print solution comprising a patented print process and compatible EB curing system, which enables wet inks to be cured instantly inline at the end of the press, eliminating the need for individual drying units. With no dot gain, WetFlex delivers high quality gravure-level graphics and trouble-free print. In addition to wet-on-wet colour printing, last down whites, overprint varnishes and adhesives can be applied instantly as a second print layer.

AquaBeam® is another water-based EB-cured ink that can be used in existing higher speed presses retro-fitted with Electron Beam curing systems. AquaBeam is a perfect option for process printing that requires blended and special colours and is suitable for surface print and lamination applications. It also offers EB cross-linking to create excellent resistance properties.

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Lithographic offset printing is also a viable alternative for printing on to flexible packaging. SunBeam® for example is an EB-cured offset ink that is particularly suited to cost effective, shorter run production. SunBeam is capable of working within presses at speeds of up to 300m per minute, with the use of low cost plates and a fixed colour palette, while the EB curing process creates excellent resistance through cross-linking. Adding to its appeal is that it can handle lamination inline, significantly reducing turnaround and customer delivery times.

Other options include well-established processes such as Ultra Violet (UV) curing flexo printing, widely used in label, lidding and flexible packaging production. Modern UV inks for food packaging now meet the most stringent compliance requirements and emerging LED curing is offering environmental benefits in energy consumption reduction.

The key to selecting the right solvent-free ink is to understand that there is no 'one size fits all'. Selection is very much down to application, legacy equipment or the potential for new capital investment as well as market demand and potential opportunities. Fortunately, the sector is served with a wide range of alternative, solvent-free inks to choose from, and by working with an experienced ink partner to help ease the process of auditing existing facilities and reviewing potential options, you can find the perfect solvent-free ink solutions for your business.

To discuss your options for solvent-free ink solutions and hear more about Sun Chemical's **Brighter Ideas for Packaging**, visit us on our stand C06 Hall 7a at interpack 2017.

¹ The Future of Global Flexible Packaging to 2020 – Smithers Pira

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