

Technical article

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Modern adhesives as innovation drivers for the graphics market

Sustainability and performance harmonized

Henkel has set itself some ambitious sustainability targets, strengthening its resolve to make more progress in this area. In short, Henkel wants to achieve more with less. Reduced material input, avoidance of waste, improved water conservation and more safety both at work and for consumers are objectives right at the heart of Henkel's approach to adhesive development.

Henkel's product portfolio for the graphics market offers numerous examples of how sustainability and performance are being taken further forward hand-in-hand. Its micro-emission range of polyurethane adhesives, for example, has set new standards in relation to occupational safety. Further development has led to a reduction of 30 °C in the application temperature, with more than just a decrease in energy consumption ensuring: Books and magazines bound with Purmelt QR and ME Cool products can also be finished more quickly. The hot tack of the Purmelt Cool products is higher than ever, producing improved spine quality and appearance combined with impressive form stability when in the machine.

The polyolefin-based Technomelt Ultra products for side gluing are another example. The raw material base widely used in the packaging industry also enables book-binders to significantly reduce their adhesive application volumes. A thinner film of adhesive likewise increases the quality of appearance of covers, thanks to improved surface flatness. Moreover, the high thermal stability of these products also keeps production running smoothly while enhancing the longevity of both machinery and spare parts.

Water-based adhesive systems containing plasticizers, e.g. to maintain workability and flexibility, tend to dominate in the manufacture and processing of book covers – for example, when it comes to casing-in the book blocks. Plasticizers generally have a low molecular weight, which increases their migration potential. In the food industry, this phenomenon gives rise to health concerns in the minds of consumers, usually in connection with printing inks and recycled cardboard. Although a book does not come into contact with food products in the conventional sense, this issue is still of relevance, particularly in relation to children's books that may often find their way into little mouths. To elevate consumer safety to the highest possible level, Henkel has launched a range of plasticizer-free adhesives products for casing-in applications under the name Adhesin LM (Low Migration).

The influence of digital printing on adhesives

With increasing digitalization in publishing, the graphics industry has found itself in a state of upheaval, with further and rapid developments in digital printing compounding the situation. Thanks to the advances in digital printing, small print runs have become profitable. And this development is also exerting an influence on book production and print finishing. This means that the adhesives used must be suitable for smaller and also slower binders than was previously the case. Smaller print runs also result in more machine changes, i.e. discontinuous production. Hence the stability of adhesive viscosity is now more important than ever. The advent of digital printing has also given rise to a burgeoning photo book industry. This uses reactive polyurethane adhesives, with rapid processability a must. Product developers are facing the challenge of having to accelerate the chemical reactivity of these systems and to get the physical curing rate of reactive adhesives as close as possible to that of standard hotmelts. Although the specification of the adhesive required still has to be aligned to the type of paper involved, just as decisive now are the machine pool and the associated technical prerequisites.

Henkel has put together a range of products that are capable of meeting the requirements of digital printing, and has also adopted this compatibility issue as a criterion for new product developments. The associated products are also available in smaller packaging. Close cooperation with machine manufacturers serving the industry, and the development of universally applicable, sustainable solutions for digital printing and other printing processes are central aspects of Henkel's strategy for the bookbinding and print finishing segment.

Henkel operates worldwide with leading brands and technologies in three business areas: Laundry & Home Care, Beauty Care and Adhesive Technologies. Founded in 1876, Henkel holds globally leading market positions both in the consumer and industrial businesses with well-known brands such as Persil, Schwarzkopf and Loctite. Henkel employs about 47,000 people and reported sales of 16,510 million euros and adjusted operating profit of 2,335 million euros in fiscal 2012. Henkel's preferred shares are listed in the German stock index DAX.

Photo material is available at <http://www.henkel.com/press>

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The following material is available:





Purmelt ME Cool 3400 shows outstanding wetting and flow properties even at the low application temperature of less than 100 degrees Celsius.