



Press Release

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Improving occupational health and safety in bookbinding operations

Berger chooses Purmelt MicroEmission

Right from its inception 140 year ago to today, the Berger printing company has been in the hands of its founding family. This Austrian concern with its long-standing traditions is currently being managed by members of the family's fourth and fifth generations. Strict customer focus, able employees and the highest of quality standards have made Berger in Austria one of the most successful companies in its industry. Now, together with Henkel, these master printers are also setting new standards in occupational health and safety.

Horn, Austria – Due to their performance profile, polyurethane hotmelt adhesives constitute an outstanding solution to virtually every common problem encountered in the art of bookbinding. However, the use of these high-grade adhesive systems also often demands the implementation of significantly more elaborate safety measures because the monomer isocyanates that hotmelts contain can constitute a considerable health hazard. Now, Austrian printers Ferdinand Berger und Söhne GmbH are putting their faith in a solution from Henkel that assigns this problem to the past: low-emission adhesives from the Purmelt MicroEmission range.

Conventional polyurethane hotmelts contain an isocyanate concentration of up to five percent. During adhesive processing, these can escape in vapor form into the ambient air and cause inflammation or allergic reactions in the respiratory tracts, eyes or skin. Consequently, such PUR hotmelts also carry the warning mark Xn. The health risk is further increased by concerns that an isocyanate content in the adhesive in excess of just one percent may be carcinogenic. Therefore, in the case of standard adhesives with an isocyanate content between one and five percent, the emission of vapor has to be extensively countered by the presence of extractor hoods over the machines used. If this is not possible, exposed workers are required to wear protective equipment (goggles, gloves, gas masks) to minimize the risk.



“We have long been looking for a system that not only offers the required binding quality but also, in particular, improves the health and safety situation facing our colleagues on the shop floor working at the machines,” explains Bernhard Surböck, manager of the bookbinding facility at Berger. “With Purmelt MicroEmission from Henkel, we have now found the solution.” These micro-emission adhesives contain less than 0.1 percent monomer isocyanates. So they go far beyond meeting the legal limit. In fact, independent institutes have tested Henkel’s MicroEmission adhesives under practical conditions on all common bookbinding facilities and application machines and confirm a reduction in monomer isocyanate in the shop floor atmosphere of up to 90 percent.

— And the strict quality requirements of Berger are also fulfilled: “In terms of their adhesive performance, the hotmelts from Henkel’s MicroEmission range are more than a match for conventional PUR hotmelts,” comments Surböck. “Indeed, in our experience they offer clear technical advantages.” For example, the initial tack is, in Surböck’s view, substantially higher, and physical adhesive strength build-up is also very fast. He goes on: “Above all, we no longer have the problem of layer displacement when inserting the book block in the case.” And the results are indeed impressive: “When using Purmelt MicroEmission, we achieve the same final strength values as with conventional PUR hotmelts,” confirms the bookbinding expert. “There are no apparent differences in the bound end product whatsoever, yet there has been a marked improvement in the occupational health and safety situation.”

— Switching the bookbinding line to this Henkel product was, he says, remarkably simple. “You could almost say that it was just a matter of taking the old drum out and putting the new one in, and that despite the fact that we operate a relatively complicated nozzle application system.” However, some attention did have to be given to one particular detail – the process temperature. When using Purmelt MicroEmission, this has to be reduced by 10°C. “Yet another benefit for us,” exclaims the delighted Austrian, “because it means that we are also able to save on our energy costs.” “Overall, the switch really did go without a hitch,” he says, “not least thanks to the exemplary service and the precise temperature control information provided by Henkel, enabling us to achieve optimum results in next-to-no-time.”

— All international plant constructors have tested and approved the Purmelt MicroEmission range. And this positive response of the graphics industry has, in the meantime, encouraged Henkel to further extend its range of low-emission Purmelts. The MicroEmission series offers a full product portfolio for spine, page and flyleaf/endsheet gluing. All its Purmelts are also optionally available in granulate form, enabling the product to be charged directly into the paste unit e.g. for testing purposes. In this way, Henkel is able to make the changeover to this future-aligned product range even easier for prospective bookbinding customers.

The German Employers' Liability Association ("Berufsgenossenschaft") expressly recommends that operators use MicroEmission products. These also enable the strict environmental regulations of the Scandinavian countries to be fulfilled. And since the beginning of 2008, Purmelt MicroEmission products have been duly carrying the "Nordic Swan" ecolabel. And needless to say, these products likewise satisfy the European chemicals regulation REACH which came into force in 2007.

Now this patented Henkel technology is being made available to the market. Its usage not only diminishes the burden on the health of employees, it also reduces the technical input and expense required to ensure process safety. By reducing the investment outlay required for the machinery and peripherals, this product range renders production more cost-efficient. And being able to boast an ecologically compatible production system gives a company a further competitive edge. Hence Henkel's long-term goal is to replace the conventional PUR adhesives right across the board with low-toxicity, safe and clean solutions.

Henkel has been committed to making people's lives easier, better and more beautiful for more than 130 years. A Fortune Global 500 and Germany's most admired company according to a recent Fortune survey, Henkel offers strong brands and technologies in three areas of competence: Home Care, Personal Care and Adhesive Technologies. Each day, more than 52,000 employees in 125 countries are dedicated to fulfilling Henkel's claim "A Brand like a Friend." In fiscal 2008, Henkel generated sales of 14,131 million euros and adjusted operating profit of 1,460 million euros.

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The following images are available on the web at: <http://www.henkel.com/press>.



The tradition-rich Austria company Berger uses Purmelt MicroEmission from Henkel in its bookbinding facility. (Photo: Berger)



The modern Kolbus Publica 12,000 bookbinding line operates with Purmelt MicroEmission from Henkel. (Photo: Berger)



Previously, protective clothing always had to be worn during setting-up and cleaning work on machines that used conventional PUR hotmelts. Now, with Purmelt MicroEmission, the isocyanate content of the shop floor atmosphere has been reduced by up to 90 percent. (Photos: Henkel)