Application note: Pertinax™ antimicrobial polyurethane foams for wound care

Introduction

Polyurethane foams are used in wound dressings. They are highly absorbent, removing and retaining wound exudate. They also provide a soft cushion for physical protection of the wound.

Polyurethane foam may be doped with antimicrobials such as silver or polyhexamethylene biguanide (PHMB). The principal aim is to manage the bioburden within the dressing, and in some cases the aim may be to deliver antimicrobial substances to the wound bed. There is appetite within the wound care market to move away from these antimicrobials, and chlorhexidine is a good candidate for this, with widespread clinical acceptance and well-established efficacy. There is opportunity for product differentiation by the use of a proprietary, long-lasting, chlorhexidine-based technology, Pertinax.

Pertinax technology

Pertinax is a patented technology that provides slow release of chlorhexidine when in an aqueous environment. The chlorhexidine is sequestered in complex phosphate salts, and the release kinetics including dose and duration can be selected using formulation and other parameters. Pertinax technology is proprietary to Pertinax Pharma Ltd, a company in north Bristol, UK.

Pertinax polyurethane foams

Pertinax can be incorporated into polyurethane foams by introducing it to the aqueous phase. The foams exhibit excellent antimicrobial efficacy (Fig. 1) from a few hours to over 1 week. Pertinax does not adversely affect the foaming process, fluid uptake or retention, or the appearance of the foam (Fig 2).

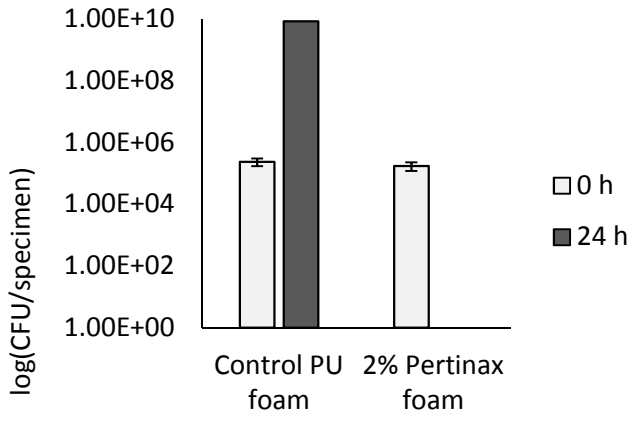

Figure 1. PU foams doped with 2% Pertinax reduce colony forming units of *S. aureus* in the AATCC100 method.

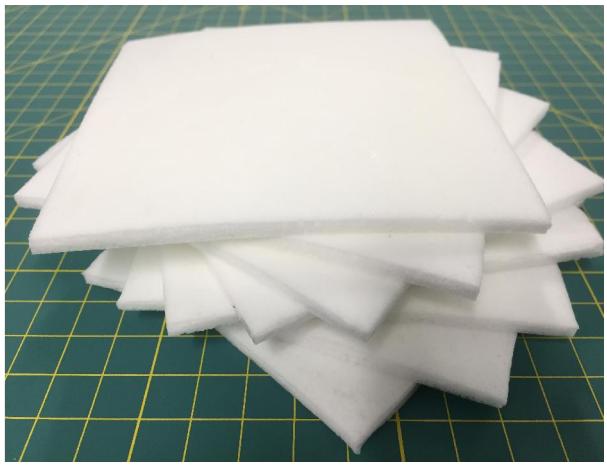

Figure 2. HDI PU foams doped with 1% Pertinax.

Opportunities

To explore opportunities to incorporate Pertinax into polyurethane foams for applications within your target marks, contact info@pertinaxpharma.com

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