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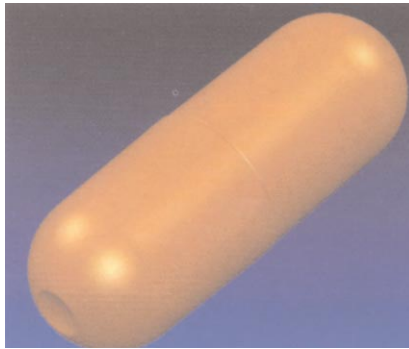
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*Left: Assembled per-  
forate capsule,  
welded or unwelded  
as required*



*Right: Section  
through two of the  
thinned areas at  
both ends of the  
capsule, also show-  
ing the final assem-  
bly position of the  
cap on the body*

# PVOH developments offer new possibilities

**By Ron Pidgeon**  
rpidgeon@cmpinformation.com

WATER-soluble measured dose packaging developments were discussed at a Dublin technical seminar organised by Aquasol, in conjunction with the Irish Institute of Packaging.

Delegates from Procter & Gamble, S C Johnson, PZ Cosusons, Sara Lee, Schering Plough, Budelpack and Boots Healthcare heard about skin & blister packaging, film production, thermoforming, injection moulding and polymers.

Tony Jackman introduced a new technology from CTP Plasro, developed with Aquasol, to produce injected moulded, three-dimensional water-soluble plastic shapes, with differing levels of dissolution at planned points. The main example put forward being a dissolvable "perforate" capsule shell that could replace the gelatine format in the medical sector or other fields.

He said a PVOH (polyvinyl alcohol) capsule has advantages over a gelatine capsule because, with gelatine, there is no controlled release, and the joint between the capsule halves is not secure, allowing tampering.

The new process offers complete dissolution, but can also deliver con-

trolled release for multi-dose medication. PVOH can be rapidly laser welded to create a strong bond between the cap and the body of the capsule, and accurate section and form reproduction using injection moulding ensures wall thickness can be closely controlled, Jackson added.

PVOH injection moulded applications are suitable for dishwashing and laundry detergents as well as a large number of measured dose applications, he said. Healthcare applications include tablet capsules, wound-care applications and disposable surgical instruments.

Interest was also shown in Aquaskin, developed by Aquasol with the help of Arthur W. Clowes. This enables the consumer to twist off the product from the backing board, allowing the product and film to be deposited in water as a whole or allowing the skin to be removed easily from the product. In both cases, the backing board and skin can be recycled within the normal paper waste stream without contaminating the system.

Arthur W. Clowes has also developed the PeelAway skin pack, which allows the film to be easily removed without removing any trace of the printed image or base material. It also adds to the ease by which the

packaged product can be removed from the skin film, reducing the risk of 'film-stick' to the product.

The process has been now adapted to work with both PVOH and standard films and for many delegates, these two new developments brought the skin pack back into their new packaging thought process.

Takeshi Watanabe, from Japanese film producers Aicello, and Tony Shelmerdine, from UK and US film producer Aquafilm, extolled developments in both blown and cast films. Shelmerdine also spoke in detail about the requirements and issues to consider when processing these films through machinery, such as in form/fill/seal bag making.

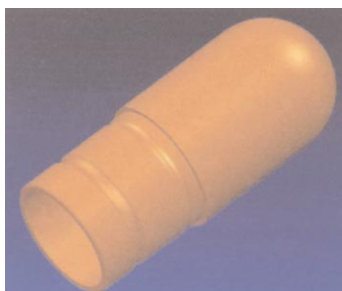
Stefan Krakow, of German company Tiromat Medical Packaging, covered in detail the latest enhancements to have taken place in the field of f/f/s thermoforming machinery for PVOH processes. He stressed the need for close co-operation between the customer, film supplier, machinery supplier and consultant.

It was emphasised that film testing prior to any new application was required to ensure the best results and highlighted the success enjoyed by detergent companies in the marketplace with their fabric and dish wash thermoformed sachets.

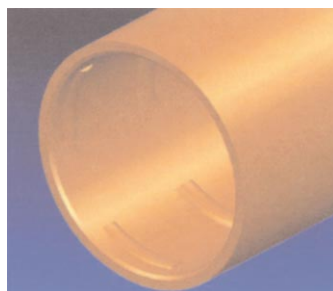
Following the success of the seminar, conversations are underway to run similar events in the USA, Japan and possibly Germany.

Aquasol is a consultancy group specialising in packaging, customised thermoforming and skin packaging machinery and water soluble developments of which they hold a large portfolio of patents, including injection moulding. A CD of the conference is available from the company, priced at £50.

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*Capsule body showing the initial  
and final assembly features*



*Capsule cap showing the initial  
and final assembly features*

be part of a larger group and based within the West Midlands Objective 2 region.

To learn more, contact Malcolm Harold at Warwick Manufacturing Group on tel: +44 (0)2476 572571 or Richard Walton at Rapra Technology on tel: +44 (0)1939 252463.

## PET waste stream analysed

GUIDELINES on additives and barrier materials in the PET waste stream are now available to help the PET production, filling and recovery chain evaluate the impact of PET bottles.

'Smart' PET bottles with their blends of different

barrier materials to extend product shelf life are further penetrating the European beverages market at a rate of around 10% a year, says the trade association Petcore.

"Guidelines on acceptability of additives and barrier materials in the PET waste stream for an effective recycling of PET", were developed by Petcore with the national recovery organisations and EuPR. Protocols were developed with the laboratories of Montefibre and PTI Europe.

The guidelines can be downloaded, free of charge, at: [www.petcore.org/publ\\_01.html](http://www.petcore.org/publ_01.html)

Petcore; tel: + 32 2 732 91 27; fax: + 32 2 736 72 64; [info@petcore.org](mailto:info@petcore.org)

## Seminar highlights opportunities of water-soluble film

WATER-soluble measured dose packaging developments were discussed at a Dublin technical seminar organised by UK company Aquasol, in conjunction with the Irish Institute of Packaging.

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He said a PVOH (polyvinyl alcohol) capsule has advantages over a gelatine capsule because, with gelatine, there is no controlled release, and the joint between the capsule halves is not secure, allowing tampering.

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PVOH injection moulded applications are suitable for dishwashing and laundry detergents as well as a large number of measured dose applications, he said. In the field of healthcare applications, there are tablet capsules, wound-care applications and also disposable surgical instruments.

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In both cases, the backing board and skin can be recycled within the normal paper waste stream without

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Stefan Krakow, of German company Tiromat Medical Packaging, covered in detail the latest enhancements in the field of form/fill/seal thermoforming machinery for PVOH processes. He particularly stressed the need for close co-operation between the customer, the film supplier, the machinery supplier and the consultant.

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