flexible solutions

A plastic that thinks it's rubber

UNTIL recently it was true to say that there was not an application that did not use rubber as a packaging material in some way or another. Think of closure seals, bore seals in jam jar tops, bulk packaging, cosmetic dispensers – the list is probably endless.

For more than 100 years, rubber as a natural product displayed many advantages: it was tactile, it had a good grip, it was non-slip and it would accept colour. It was impact resistant, durable and flexible, a good sealer and tolerance adaptive. So why is rubber no longer a premier packaging material? The answer is probably 'recyclability.'

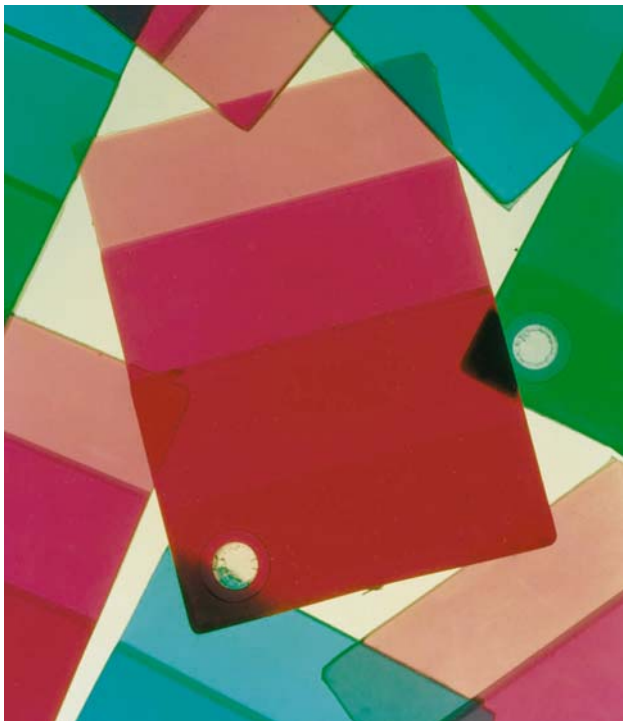
An old engineer I knew many years ago used to say as a first lesson when training apprentices: "When your mother makes a cake, she mixes together various ingredients and pops the mixture into the oven – that's like rubber. But when she makes a jelly she mixes together the ingredients and puts the mixture in the fridge – that's like plastic." He had hit the nail on the head. Because the molecular structure of plastic is not altered during processing, it is a product that is ultimately recyclable.

But what if we could create a plastic that exhibited all the qualities of rubber? This is largely achieved with thermoplastic elastomers – TPEs.

TPEs exhibit all the qualities of rubber but in a plastic. They are recyclable and, when processing efficiencies are considered, 20% cheaper than rubber in the moulding or extrusion process.

Two significant early adopters of TPEs have been the building and construction industry and the automotive market. Both are areas where competitive advantage is paramount, where more effective materials and material usage is a sure route to success, and where effective long-life components are essential.

But what of the packaging industry? Although more expensive than rubber or synthetic rubber at the compound stage, thermoplastic elastomer compounds achieve savings in finished mould or extrusion by 20%, due to the inherent production efficiencies such as no mould heating and fast cycle times, and the fact that all sprue is recyclable.



Thermoplastic Elastomers offer the soft-touch feel of rubber with the easy processing of a plastic

But more importantly as far as brand owners and packer/fillers are concerned, thermoplastic elastomers produce unlooked for and previously undreamt of design advantages. TPEs can be overmoulded onto other polymers such as ABS or PC.

They can be used in two shot injection moulding to create for example a closure with seal tolerance and a soft-touch exterior finish. The product is extremely ductile, can spread evenly over surfaces moulded in any contour and is easy to colour.

Whether or not TPEs are a designer's dream, there is one sure thing that is, their 100% recyclability, which with Essential Requirements legislation and ever increasing recycling targets has to be a plus for packaging designers and specifiers.

ELASTO
A HEXPOL COMPANY

Sweden
tel : 46 (0) 532 60 75 00
info@elastotpe.com

UK
tel : 44 (0)161 654 6616
info@elastotpe.co.uk

France
tel : 33 (0) 160 43 17 17
pascal.gruyer@elastotpe.com

www.elastotpe.com