

# RESPONSIVE POLYMER COATED PARTICLES FOR CONSUMER PRODUCTS

Lisa E. Scullion<sup>1</sup>, Paul. H Findlay<sup>2</sup> & David A. Pears<sup>3</sup>

*1 Revolymer (U.K.) Limited, 1 Newtech Square, Zone 2, Deeside Industrial Park, Flintshire, CH5 2NT UK*

[lisa.scullion@revolymer.com](mailto:lisa.scullion@revolymer.com)

There are many challenges associated with stabilisation of active benefit agents in detergent, personal care and other household and professional product formulations. Revolymer's encapsulation and particle processing technologies aims to enable new types of formulation with improved consumer benefits whilst having long shelf life and fast release of actives in use. Such technology will for example enable superior performance at low temperatures and with short wash cycles.

The market for liquid formulations of laundry detergents and other non-laundry cleaners continues to grow more rapidly at the expense of the conventional powder market, fuelled by retailer and end user preferences. However, current liquid laundry formulations do not contain bleaching agents, which are important constituents of most modern powder formulations and play a key role in cleaning and hygiene. This is because it has not, to date, been possible to stabilise such actives in a liquid formulation. Revolymer's household technology team have developed polymeric barrier materials which are able to stabilise the cleaning actives in liquid formulations so their shelf lives are significantly extended. These polymeric coating materials are 'stimuli-responsive' in that the actives are protected whilst they remain in the liquid product formulation. When the product is used during the cleaning process, the responsive polymer coatings are sensitive to changes in environment such as pH, dilution or ionic strength and quickly disperse to release the active into the cleaning cycle.

High performance cleaning actives can also be stabilised in powder and tablet forms for laundry and autodishwash formulations using a combination of granulation or spheronisation in combination with the responsive barrier coating to give robust, free-flowing uniform particles that protect the active from incompatible formulation ingredients.

Polymer coating protects the active from attack by media components



Coating dissolves in end use application to release the active into solution