

# Innovation in Encapsulation

## Opportunities and challenges in encapsulation for Home & Personal Care Products

### Abstract

The efficient delivery of “high value” actives is vital in providing optimum performance from products such as laundry detergents, shampoos and hair conditioners, toothpastes and deodorants/antiperspirants. Key concerns are to ensure consumer perceivable benefits from safe, sustainable and cost-effective formulations.

Examples of such actives include “functional” ingredients (such as antioxidants, cleaning enzymes) and sensory benefit agents (such as fragrances and flavours).

Overcoming instability or incompatibilities between different components in a product can present significant challenges to the formulator, while simply retaining sufficient quantities of an active on the treated substrate to give a desired post-application effect can be difficult, especially with detergent based formulations. From a technical perspective, this scenario presents two distinct challenges:

- targeting deposition of actives to the right substrate or location
- ensuring the deposited actives are available at the right time points

Solutions include the use of precursor technologies which liberate the active material *in situ*, the use of encapsulation technologies and approaches for targeting these encapsulates to specific substrates. Examples of the application of the last two approaches will be given in the context of Unilever’s Home and Personal Care business with the focus on delivery of fragrance.

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