Decocoat

Polyolefine dispersions for textile coating

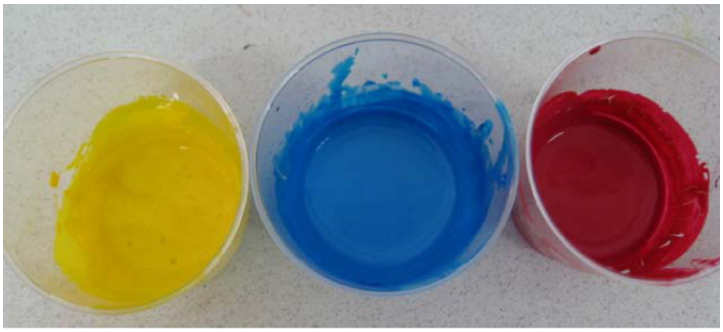
During the DECOCOAT project we have explored the possibilities of polyolefin (PO) dispersions for textiles. This research reflects and supports the growing ecological awareness within the textile industry.
PO dispersions may substitute (part of) the present phthalate-using flexible PVC coatings.

What ?

In a PO dispersion the polyolefin particles are evenly scattered in water. The basic products (as supplied by e.g. DOW Chemicals or Mitsui) have a milky aspect. The particle size is in the order of a few micrometers.

The dispersions are typically composed of about 40 to 55% solids. The PO dispersions are a mix of propylene and ethylene copolymers. Their pH value varies between 8 and 10.

Their viscosity is an important processing aspect; although the viscosity is rather low in the case of basic products (<500cps) it can be adapted in function of the application.

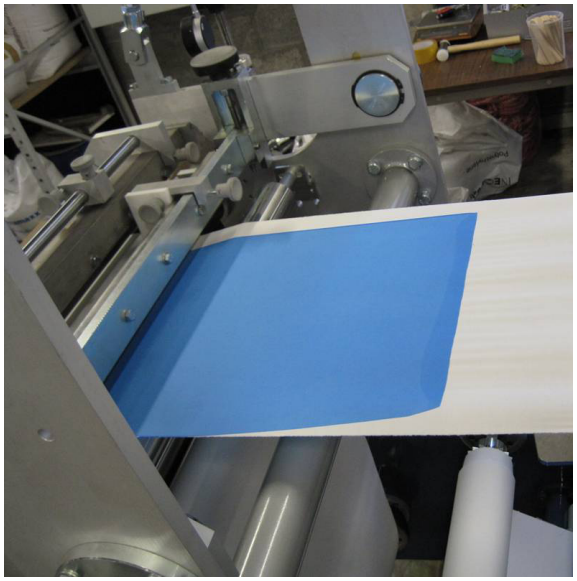


PO dispersions. (left) Basi cproduct - (right) coloured coating formulation

How ?

PO dispersions are fairly easy to process. By applying the necessary additives, we can confer the right properties to the basic formulation (e.g. viscosity).

In this way, the formulations can be applied by padding, blade coating (air and roll) or screen printing. Transfer coating and yarn coating too are possible techniques.



Why ?

In comparison to PVC coatings, PO dispersions have a major ecological advantage, which may be crucial in those applications where some chemicals are prohibited (as in baby's clothing) by legislation or by eco-labels, such as Oeko-Tex®.

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Further advantages :

- PO's have a relatively low weight density allowing the application of "light" coatings
- possiblility to functionalize basic formulations
- use of several application techniques, such as padding, air- and blade coating, screen printing
- very good water column

Examples :

Screen printing of PO dispersion on cotton fabric

Raincoat made from PO coated PES fabric

Consortium:

DECOCOAT is a European FP7 "Research for SMEs" project.

In this kind of projects, a number of research partners (Centexbel - Belgium, Teknologisk Institut - Norway, Aitex - Spain) are commissioned by a groep of SME companies. Calcutta and Luxilon were the Belgian SME partners in the project.

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