Abstract paper for Keele meeting, 22-23 Sept 1994

"The preparation and properties of vinyl ester (VeoVa)/(meth)acrylate copolymer latices"

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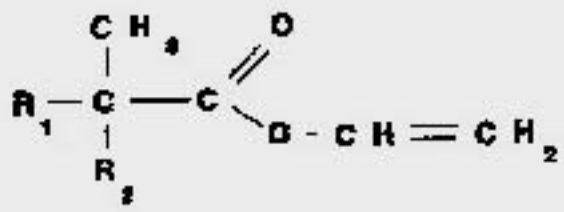
Shell's vinyl ester VeoVa* monomers have branched structures:



where R_1 and R_2 are alkyl groups which together have 7 carbons ("VeoVa 10") or 6 carbons ("VeoVa 9")

VeoVa 10 (homopolymer T_g = -3°C) and VeoVa 9 (T_g = +62°C) are highly-hydrophobic monomers which are mainly used to upgrade the performance of vinyl acetate latex binders for emulsion paints.

Recent work [1,2] has shown that VeoVa monomers can also enhance the performance of acrylic latices, in particular with respect to water resistance. Premium performance end-uses are envisaged, eg coatings for wood, metal and brick.

VeoVa/(meth)acrylate latices are readily prepared via conventional emulsion polymerisation processes. Since VeoVa:(meth)acrylate monomer reactivity ratios deviate significantly from unity, an experimental programme was carried out to determine the influence of monomer addition profile on polymer homogeneity and clear film properties. The results indicate that a VeoVa-rich "shell" is formed, particularly with short monomer addition times. Composition drift has been successfully predicted using a computer simulation model [3].

* VeoVa is a Shell trade mark

REFERENCES:

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3. J. Guillot, Makromol. Chem., Macromol. Symp. 35/36, 269-289 (1990)