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SYNTHESIS OF POLY(VINYL ACETATE-*co*-DIOCTYL MALEATE) LATEX IN THE PRESENCE OF N-(HYDROXYMETHYL)ACRYLAMIDE AS A NEW OLIGOMERIC PROTECTIVE COLLOID

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Poly(vinyl acetate) latexes are widely used in a waterborne coatings and adhesives. Because of their some poor properties in these industrial applications, vinyl acetate (VAc) is copolymerized with another monomer such as ethylene, butyl acrylate, 2-ethyl hexyl acrylate and methyl methacrylate. The improvement of copolymer latex properties depend on the some important factors which are emulsion polymerization components like a comonomer, emulsifier, protective colloid etc., copolymer composition and polymer morphology.

In this study, poly(vinyl acetate-*co*-dioctyl maleate) latexes were synthesized by semicontinuous emulsion polymerization. Potasium persulfate as an initiator, ethoxylated nonyl phenol derivatives as non-ionic emulsifiers and a new oligomeric N-methylolacrylamide (AMOL) as a protective colloid were used. The effects of comonomer ratio, ethoxylation degree of emulsifier and emulsifier concentration on the physicochemical and colloidal properties of vinyl acetate-dioctyl maleate (VAC-DOM) copolymers which were prepared in the presence of new oligomeric protective colloid N-methylolacrylamide (AMOL) were investigated. Conversion, copolymer composition, viscosity, particle size distribution and surface tension of poly(vinyl acetate-*co*-dioctyl maleate) latexes were determined respectively by using gravimetric method, Nuclear Magnetic Resonance (NMR), Brookfield viscosimeter, Zeta-sizer, ring-detachment method.