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Preparation of carbon black natural rubber latex master batches using a novel dispersing agent

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Master batches of rubber with carbon black can be produced by mixing the latex with an aqueous slurry of carbon black before coagulation. The slurry can be prepared with the aid of a dispersion agent; using high shear, thus obtaining a stable colloidal aqueous dispersion of carbon black. This when mixed with natural rubber latex and coagulated gives a coagulum where carbon black is homogeneously dispersed. Main aim of the project was to obtain a good retention of carbon black in the coagulum using naturally available materials. The activity of skim rubber serum after sonication and papain treatment was compared with the activity of triton x-100 for the use as a dispersion agent. The results indicated that, papain treated skim rubber serum has superior properties as a dispersing agent. It is possible to achieve ~50% dispersion with over 95% retention of carbon black using papain treated skim rubber serum.

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