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Polyethylene-Organoclay Nanocomposites by Melt Processing: The Effect of Matrix Modification on Organoclay Exfoliation

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The structure and properties of nanocomposites prepared from polyethylene type matrices using melt processing techniques are presented here. Nanocomposites prepared from poly(ethylene-co-methacrylic acid) and poly(ethylene-co-methacrylic acid) ionomers were compared to those prepared from low density polyethylene. The relationship between various aspects of the organoclay structure and the morphology and properties of nanocomposites prepared from these organoclays were also explored. The following is a progress report on this work where the broad objective is to develop a better understanding of the matrix-filler interactions these systems, which could eventually lead to the formation of well-exfoliated, high performance nanocomposites from such matrices.