

Solvent selection in the emulsion crystallization of low molecular weight polyethylene

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Low molecular weight polyethylene is the oligomeric by-product of HDPE polymerization process. This material has inherently problems like wide molecular weight distribution and low purity due to volatile compound and deactivated catalyst. In order to use it as a particulate form adequate for the industrial applications, extensive studies have been directed towards the preparation of low molecular weight polyethylene particle with high purity. But, a feasible method for producing spherical micron-sized particles with narrow size distributions has not been developed as yet. This study aims to develop the emulsion crystallization technology with temperature dependent miscibility solvent system for the purification of low molecular weight polyethylene and preparation of micron sized polyethylene particle.