



THE PROCESSABILITY AND MECHANICAL PERFORMANCE OF BLOW MOLDED MILK BOTTLE MATERIALS COMPRISING OF VIRGIN AND RECYCLED HDPE (RHDPE)

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An investigation of the processability and mechanical performance of HDPE blends that included recycled HDPE (rHDPE) has attempted to determine the suitability of these materials for the manufacture of blow moulded milk bottles. The inclusion rate of rHDPE, which is collected from post consumer waste, is set to rise towards 30% within the next few years within the UK and ultimately up to 50%. The work presented here has subjected the virgin and rHDPE materials, including blends, to thermal cycles representative of the loop comprising of initial processing, reclaim and conversion to food grade rHDPE. Samples have been analysed for rheological changes, GPC and mechanical performance. Although some notable rheological changes have been observed the stability of the material is good through successive processing and mechanical properties are retained up to inclusion fractions of around 40%.