

Influence of Processing Regime and Contaminants on the Properties of Postconsumer Thermoplastics

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Abstract : Material recycling of thermoplastic waste offers practical solution for municipal solid waste reduction. Post-consumer plastics such as polyethylene (PE), polyethyleneterephthalate (PET), and polystyrene (PS) may be separated from each other by physical methods such as density difference and hence processed as single plastic, however one should be cautious about the contaminants presence in the waste stream inform of paper, glue, etc. since these articles even in trace amount may deteriorate properties of the recycled plastics especially the mechanical properties. furthermore, melt processing methods used to recycle thermoplastics such as extrusion and compression molding may induce degradation of some of the recycled plastics such as PET and PS. In this research, it is shown that care should be taken when processing recycled plastics by melt processing means in two directions, first contaminants should be extremely minimized, and secondly melt processing steps should also be minimum.

Keywords : Recycling, PET, PS, HDPE, mechanical

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