

Erratum

The role of a dechlorinated PVC as compatibiliser for PVC/polyethylene blends

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Unfortunately there were two small errors in this contribution. Firstly one of the authors was omitted, namely L. Iusta.

In the first paragraph of the result and discussion section (p. 285) a part was not easily understandable. The corrected version is shown below.

Results and Discussion

It is well known that PVC and PE are immiscible polymers [5], which show a clear phase separation when they are mixed. Dynamic Mechanical results reported in the literature [8] show well defined PE and PVC phases, which are characterized by their corresponding glass transition temperatures. Our results of Figure 2, where $\tan \delta$ spectra are presented, reveal that no alteration of PVC and PE respective α relaxation takes place when both polymers are mixed. These symptoms of phase separation do not change when compatibilisers, RPVC or rCPE, are added to the binary PVC/PE blend: the relaxation peaks, associated to the respective glass transition temperatures remain in the same position. From this point of view no compatibilising effect can be attributed to these copolymers. However some minor, but significant, effects of the presence of a third component are detected. For instance the analysis of the spectra in the range -10 to $+80^\circ\text{C}$ reveals an increase of damping for ternary PVC/PE/RPVC and PVC/PE/rCPE systems with respect to the binary blend. This enhancement of damping is more noticeable when rCPE is used as the third component. The dual nature of rCPE and RPVC copolymers, with a certain affinity with both, PE and PVC, allow them to reach the interphase and interact with each of the pure polymers. Within this framework the increase of damping can be associated to new processes of molecular relaxation, due to a new phase with an onset of chain mobility different from both of the homopolymer domains. Since more damping is observed for PVC/PE/rCPE system, we can assume that rCPE is more efficient in order to modify PVC-PE interphase, than RPVC.

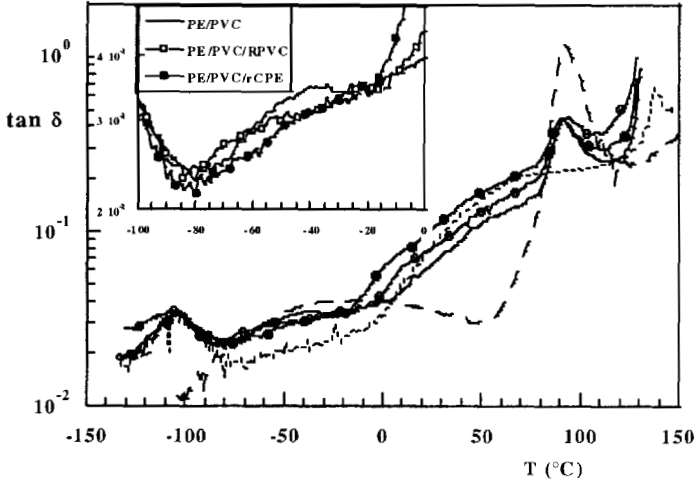


Figure 2 Dynamic mechanical spectra, loss tangent as a function of temperature of pure polymers(.....PE) (----PVC) and its binary and ternary blends. In the inlet, the larger values of $\tan\delta$ in the range (-80;-10) correspond to PE/PVC and the smaller to PE/PVC/rCPE.