



Science Arts & Métiers (SAM)

is an open access repository that collects the work of Arts et Métiers Institute of Technology researchers and makes it freely available over the web where possible.

This is an author-deposited version published in: <https://sam.ensam.eu>
Handle ID: <http://hdl.handle.net/10985/8464>

To cite this version :

Matthieu GERVAIS, A ALKHUDER, A. GRANDMONTAGNE, Alain GUINAULT, Cyrille SOLLOGOUB - Impact on thermomechanical behaviour of a maleic anhydride grafted ABS on ABS/PC multi-layered blends - 2013

Any correspondence concerning this service should be sent to the repository

Administrator : scienceouverte@ensam.eu



Impact on thermomechanical behaviour of a maleic anhydride grafted ABS on ABS/PC multi-layered blends

M. Gervais^{a,b}, A. Alkhuder^b, A. Grandmontagne^{a,b}, A. Guinault^{a,b}, C. Sollogoub^{a,b}

^a PIMM, CNAM/ENSAM, 151 boulevard de l'hôpital 75013 Paris, France

^b P-2AM, CNAM 292, rue Saint Martin – F75003 Paris - France

Email of corresponding author: matthieu.gervais@cnam.fr

The significant increase of Waste Electric and Electronic Equipment (WEEE) has led to an important research in upgrading recycled engineering plastics by means of a blending technique. In particular, there is an interest in studying the properties of ABS/PC blends, the two most important components of WEEE, at ABS rich compositions, according to the generation ratio of waste [1].

Since ABS and PC are immiscible, the final properties depend to a large extent on the flow-induced morphology [2]. In order to better control the final blend morphology of injection molded samples, we propose a two-step approach: the first step consists in producing pellets with multilayered structure, using a multilayer coextrusion device. During the second subsequent step, the pellets are injection molded, with temperature conditions chosen to minimize the deformation of the created structures. The effect of a compatibilizer, namely, an ABS grafted with maleic anhydride (ABS-g-MA) [3] on the thermomechanical properties and morphology has been investigated.

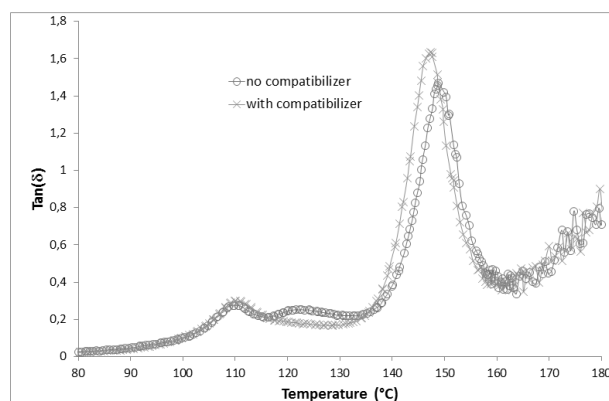


Figure 1. $\tan\delta$ as a function of temperature for ABS/PC blend (70/30 wt%) with and without the addition of ABS-g-MA

1. Barthes, M.-L.; Mantaux, O.; Pedros, M.; Lacoste, E.; Dumon, M. *Advances in Polymer Technology* 31, (4), 343-353.
2. O-Charoen, N.; Leong, Y. W.; Hamada, H. *Polymer Engineering & Science* 2008, 48, (4), 786-794.
3. Elmaghor, F.; Zhang, L.; Fan, R.; Li, H. *Polymer* 2004, 45, (19), 6719-6724.