

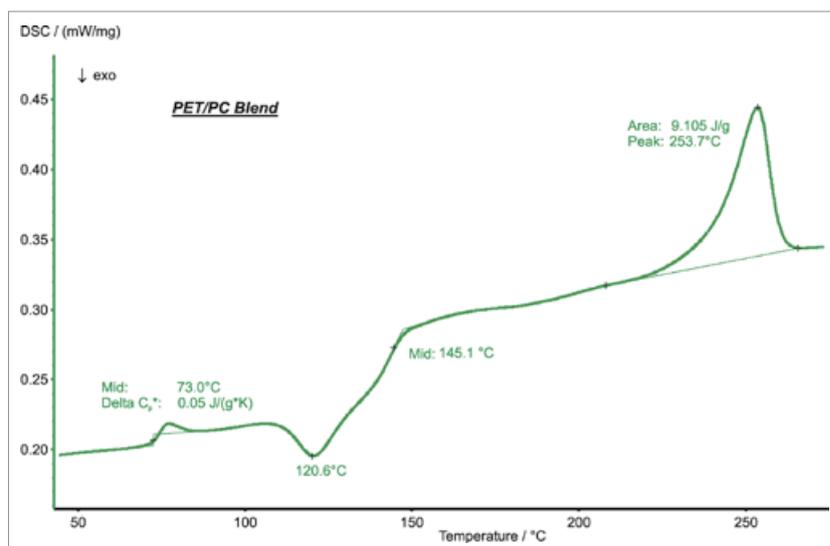
APPLICATION SHEET

POLYMERS – AUTOMOTIVE

PET/PC BLEND

Depending on its processing and thermal history, polyethylene terephthalate may exist both as an amorphous (transparent) and as a semi-crystalline (opaque and white) material. The majority of the world's PET production is for synthetic fibers (in excess of 60%) with bottle production accounting for around 30% of global demand. Polycarbonates are easily worked, molded, and thermoformed; as such, these plastics

are widely used in modern manufacturing. The most common type of polycarbonate plastic is one made from Bisphenol A. This polymer is highly transparent to visible light and has better light transmission characteristics than many kinds of inorganic glasses. A blend consisting of PET and PC has a significant improvement in mechanical property and processibility compared to each homopolymer.



Instrument

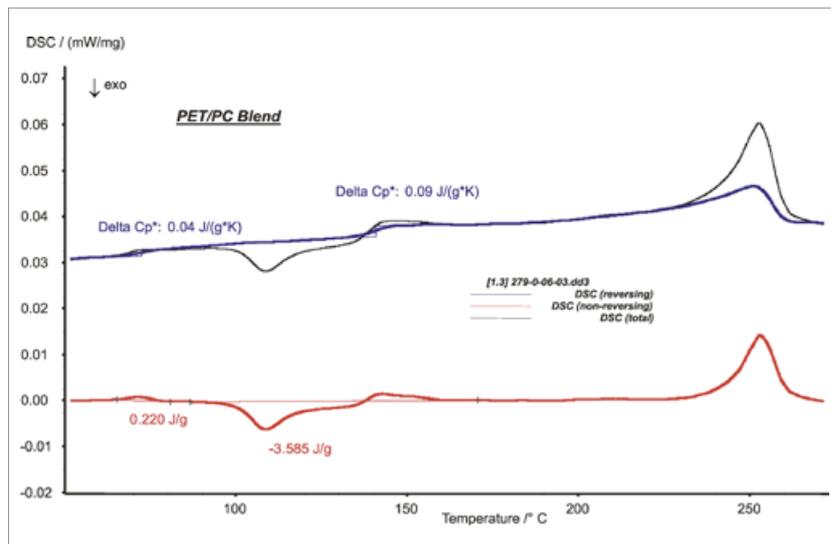
DSC 204 **F1** Phoenix®

Test Conditions

Temperature range	20 ... 280°C
Heating/cooling rates	10 K/min
Atmosphere	Nitrogen (20 ml/min)
Sample mass	10.52 mg
Crucible	Al, pierced lid

APPLICATION SHEET

POLYMERS – AUTOMOTIVE



Instrument

DSC 204 **F1** Phoenix®

Test Conditions

Temperature range	20 ... 280°C
Heating rate	1.5 K/min
Amplitude	0.5 K
Period	120 s
Atmosphere	Nitrogen (20 ml/min)
Crucible	Al, pierced lid
Sample Mass	14.02 mg

Results

In the measurement without modulation, the delta Cp step of polycarbonate is overlapped by the post-crystallization peak of PET; therefore an accurate evaluation of the effects was not possible. The modulated measurements allow separation of the reversing and non-reversing signals. The glass transition of both polymers is visible in the reversing signal whereas the post-crystallisation of PET occurred in the non-reversing signal. Moreover the endothermic effects after each glass transition, which are due to the relaxation effects of the samples, are only also visible in the non-reversing signal. The glass transition of PET can therefore be evaluated with a high accuracy.