

particles that are small enough scale such that a minimum volume is needed to improve the impact performance without adversely affecting the modulus of the blend.

An additional improvement would be to develop an elastomer that improves the impact performance without adversely affecting its clarity or other preferred properties. Ideally, the modulus and clarity of the PP/propylene-containing elastomer blend product should be comparable to that of PP homopolymer.

SUMMARY OF THE INVENTION

The ~~invention-disclosure~~ provides a composition comprising: polypropylene; an elastomer with bimodal or multi-modal molecular weight distribution characteristics and, optionally, bimodal or multi-modal composition characteristics; a block composite as a compatibilizer; and, an optional filler such as talc.

The disclosure provides a composition comprising: polypropylene; and, a multi-mode molecular weight distribution elastomer; a block composite; and, optionally, a filler.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a deconvoluted GPC curve for Example 1.

Figure 2 shows a deconvoluted GPC curve for Example 1.

Figure 3 shows a deconvoluted GPC curve for Example 1.

Figure 4 shows viscosity curves for the indicated polymers.

DETAILED DESCRIPTION

Polypropylene

Impact modified compositions comprise a matrix polymer toughened via blending with an elastomer composition. In one embodiment, the matrix polymer is a polypropylene. Any polypropylene known to a person of ordinary skill in the art may be used to prepare the polymer blends disclosed herein. Non-limiting examples of polypropylene include low density polypropylene (LDPP), high density polypropylene (HDPP), high melt strength polypropylene (HMS-PP), high impact polypropylene (HIPP), isotactic polypropylene (iPP), syndiotactic polypropylene (sPP) and the like, and combinations thereof.

The amount of the polypropylene in the polymer blend, or composition, can be from about 0.5 to about 99 wt%, from about 10 to about 90 wt%, from about 20 to about 80 wt%, from about 30 to about 70 wt%, from about 5 to about 50 wt%, from about 50 to about 95 wt%, from about 10 to about 50 wt%, or from about 50 to about 90 wt% of the total weight of the polymer blend. In one embodiment, the amount of the polypropylene in the polymer