

CHAPTER V

CONCLUSION

In this work, sodium neutralized poly(ethylene-co-methacrylic acid) ionomer (Na-EMAA) as a compatibilizer was added to the HDPE/PBT blends by melt mixing. Rheological measurements of PBT/Surlyn blends induced the Na-EMAA carboxylate ionomer can react with hydroxyl and carboxyl group of PBT. As the Surlyn content increases from 1 to 10 phr, the interfacial adhesion between HDPE and PBT increases. SEM was used to observe the fracture morphology, the morphology became finer and the size of dispersed particles decreases. Blends at ratios of HDPE/PBT 70/30, 50/50 and 30/70 compatibilized by Surlyn, mechanical results showed the tensile modulus were not remarkably changed, but 1 phr of Surlyn obviously increased tensile strength when compared with uncompatibilized blend. DMA curves showed the glass transition which indicated the miscibility of blends with different composition. DSC results suggest that both HDPE and PBT components in the blends crystallized concurrently, the addition of Surlyn shifted the T_C of PBT-rich phase to higher Temperature in the blend of HDPE/PBT 30/70, but the addition of surlyn shifted the T_c of HDPE-rich phase to lower temperature in the blend of HDPE/PBT 70/30.