

CHAPTER V

CONCLUSION

In this study, binary blends (PBT/HDPE-g-MAH) had lower impact strength than that of HDPE/PBT blend. Besides phase morphology revealed that it was hard to distinguish between 2 phases which are HDPE-g-MAH as a matrix and PBT as a continuous phase, small HDPE-g-MAH domain mostly occur among continuous phase with increasing HDPE-g-MAH content. Moreover, thermal properties and crystallization behavior indicated that these blend was more compatible than HDPE/PBT blend due to chemical reaction between MAH ring and chain end of PBT which can be noticed from T_c of PBT and HDPE-g-MAH. T_c of PBT was decreased with increasing HDPE-g-MAH content because of decreasing H-bond between PBT polymer chain after chemical interaction of 2 phases and MAH ring. As T_c of HDPE-g-MAH was increased with increasing HDPE-g-MAH content owing to the difficulty of amorphous phase movement.

On the other hand, general mechanical properties of tertiary blend (PBT/HDPE with compatibilizer) had lower than that of HDPE/PBT blend. Yong's modulus, stiffness and impact strength were also decreased with increasing compatibilizer content. Phase morphology of tertiary blend showed that HDPE domain was smaller than that of HDPE/PBT blend. However, $\tan \delta$ of these blend illustrated incompatible blend occurrence even HDPE became domain smaller after increasing a compatibilizer content. Furthermore T_c T_m and X_c of both HDPE and PBT unclear evidence of compatible blend occurrence after adding HDPE-g-MAH.