CHAPTER V
CONCLUSIONS

1. Most blends of ESCOR®310/EAAs showed linear relationship between mechanical properties and the addition of EAA copolymers that included the increase of Young's modulus and tensile strength at break, decrease elongation, and improvement hardness and gloss. Some blends showed synergistic behavior due to higher percent crystallinity. This is because both materials can be crystallized and also form stronger interaction between themselves. Some blends exhibited values below linear relationship probably due to phase-separation in these blends.

2. From thermal analysis, the crystallization temperature of pure EAAs copolymers suggest that the possible tendency from high to low amount of acrylic acid in EAAs copolymers are EAA1, EAA2, EAA4, and EAA5 respectively. This is because crystallization temperature of EAA1 showed the highest temperature; indicating the lowest impurity or lowest amount of acrylic acid.

3. Crystallization curves of ESCOR®310/EAA1 at 60, 50, 40, and 20 %wt of EAA1 content showed two peaks, which is probably due to different crystallization rate between ESCOR®310 and EAA1. These results corresponded to their melting temperatures. While crystallization curves of ESCOR®310/EAA2, 4, and 5 blends showed single temperature because of their co-crystallizations and also these results corresponded to their melting temperatures.

4. Rheological measurement indicated that all ESCOR®310/EAA5 blends are miscible blends because their complex viscosity ($\eta^*(\omega)$) plotted against EAA5 fraction followed log-additivity rule.

5. The DMA study showed that blends of ESCOR®310 and EAA5 are completely miscible due to having only one second-order transition (T_g). Whereas most blends showed partially miscible.

6. For the application, ESCOR®310/EAA5 at 80% wt of EAA5 was consider to be the most suitable use as a good vibration and sound dampening material because of its high tan δ (or dampening peak) observed by DMA.