

CHAPTER V

CONCLUSION AND SUGGESTION FOR FUTURE WORK

5.1 Conclusion

BDPD (3) was synthesized by the reaction between diglycidyl ether of bisphenol A (1) and diallylamine (2). TAPE (6) was synthesized by the reaction of allyl glycidyl ether (5) and ethylene diamine (4). BDPD and TAPE were used as crosslinking agents in the preparation of PU and PU/PS elastomers by employing one-shot process.

When BDPD was used as a crosslinking agent in the preparation of PU and PU/PS elastomers, the equivalent weight ratio of MDI:POLYOL:BDPD was 2:1.8:0.2, the amount of styrene monomer were 0, 10, and 20 % by weight. 0.02 % by weight of dibutyltin dilaurate was used as catalyst. MEKP/Co was used as an initiator at 1 and 2 % by weight. The equivalent ratio of NCO/OH was 1.04 . The best mechanical properties was obtained from the following formulation : MDI:POLYOL:BDPD=2:1.8:0.2 .

When TAPE was employed as a crosslinking agent, the equivalent weight ratios of MDI:POLYOL:TAPE were 2:1.8:0.2, 2:1.6:0.4 and 2:1.4:0.6 , the amount of styrene monomer were 0, 10, and 20 % by weight. 0.02 % by weight of dibutyltin dilaurate was used as catalyst. MEKP/Co was used as an initiator at 1 and 2 % by weight. The equivalent ratio of NCO/OH was 1.04 . The best mechanical properties was obtained from the following formulation : MDI:POLYOL:TAPE=2:1.4:0.6 , 20 % by weight of styrene monomer , 2 % by weight of MEKP/Co and 0.02 % by weight of dibutyltin dilaurate.

5.2 Suggestion for Future Work

These studies has been definitely incompletd and there are still many aspectss which is required further studies as shown below.

1. The equivalent weight ratio of NCO/OH should be varied in order to study effect on formation of polyurethane and PU/PS elastomers.
2. The rate of different reactions occurring during polymerization such as reaction between isocyanate and hydroxyl groups and free radical reactions should be studied in details.
3. Other catalysts, initiators, and monomers can be employed.
4. The mechanical properties of PU and PU/PS elastomers could be improved by use of compression molding technique in the preparation of the elastomer.



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