



CHAPTER V CONCLUSION

In this experiment, PMMA sheets casted by isothermal and non-isothermal temperature profiles in various conditions were studied and their properties compared with the commercial PMMA sheet, the reference or blank sample. The monomer conversion of the sheets that were produced by isothermal condition was relatively lower than that of the blank sample. On the other hand, the lower conversion means the higher monomer residue. This was considered to be harmful and dangerous to the consumer. The equal value of monomer conversion of experimentally casted PMMA sheet to the blank PMMA sheet was observed when the non-isothermal casting temperature profiles were used.

Mechanical properties that were observed in this experiment showed that, for PMMA sheets produced by isothermal temperature profiles were not as good as that of blank sample. By using non-isothermal temperature profiles, the mechanical properties observed were approximately equal to the blank sample.

Molecular weight, and molecular weight distribution were considered to be unaffected by both isothermal and non-isothermal processes. Also, very high molecular weight and molecular weight distribution were reached due to the low initiator concentration used and the uncontrolled polymerization throughout the reaction.