



## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

The results presented in chapter four are summarized as follows:

#### 5.1 Conclusions

5.1.1 Both types of the sandwich membranes developed in this study allowed chlorine to pass through so they might not be suitable for using as the membrane for the amperometric sensor.

5.1.2 Hydrogen and chlorine permeability coefficients of both Derakane® 470-300 and Derakane® 8084 sandwich membranes increased with increasing temperature.

5.1.3 The sandwich membranes made of Derakane® 8084 had higher hydrogen selectivity than ones made of Derakane® 470-300.

5.1.4 The selectivity for hydrogen of the Derakane® 8084 sandwich membranes was more temperature-dependent than the Derakane® 470-300 sandwich membranes.

5.1.5 The presence of chlorine affected the permeation of hydrogen through the membrane.

5.1.6 The permeabilities of hydrogen and chlorine through Derakane® 8084 sandwich membrane at different hydrogen contents in hydrogen/chlorine gas mixture were not the same.

#### 5.2 Recommendations

5.2.1 The transport of hydrogen and chlorine in mixed gas system of other hydrogen contents should be studied.

5.2.2 Other membrane material that does not allow chlorine to pass through needs to be studied.