

## ABSTRACT

Novita, Dian W. 2013. Determination of Optimum pH and Temperature Toward Coated Wire Mercury Ion Selective Electrode (CWE Mercury) Based-Chitosan in Cosmetics. Final Assignment, Pharmacy Program, Faculty of Medicine Brawijaya University. Supervisors : (1) Dr. Atikah, M.Si., Apt. (2) Ema Pristi Yunita, M.Farm Klin., Apt.

Ion Selective Electrode (ISE) is widely used in analytical chemistry which can test anion and cation. The aim of this study was to determine the optimum pH and temperature of coated wire mercury ion selective electrode (CWE mercury) using membranes made from chitosan as an active material, supporting material mixture of polyvinyl chloride (PVC), dioctylphthalate (DOP) with a ratio (%weight) chitosan : PVC: DOP = 3 : 39 : 58 was dissolved in tetrahydrofuran (THF) solvent (1:3 w/v). In this study, the determination of the pH optimum was done by measuring the potential solution of mercury chloride in the concentration range  $1 \times 10^{-1}$ - $1 \times 10^{-8}$  M at pH range 3-8, and the determination of temperature was done by measuring the potential solution of mercury chloride in the concentration range  $1 \times 10^{-1}$ - $1 \times 10^{-8}$  M at a temperature of 20-30 °C. The research results showed that CWE mercury based-chitosan membrane has a pH optimum at pH 6 and had a temperature optimum at 20-30 °C.

Key words : Ion Selective Electrode (ISE), chitosan, pH, temperature