



## The Coated-Wire Ion-Selective Electrode (CWISE) of Tartrazine Using Chitosan as an Ionophore



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### Abstract

Research on the Ion-Selective Electrode (ISE) of coated wire-type tartrazine using chitosan as an ionophore has been developed. The variables used in the manufacture of ISE are membrane composition and immersion time. Meanwhile, the basic characteristics of ISE measured are Nernst value, measurement concentration range, detection limit, and measurement response time. The results showed that ISE tartrazine coated wire type had an optimum membrane composition in a mixture of chitosan: PVC: DOP of 3: 34: 63 (% w/w) and a membrane immersion time 20 minutes. The basic characteristics of ISE produce a Nernst value of 20.976 mV/decade. The measurement concentration range is  $1 \times 10^{-7}$ – $1 \times 10^{-2}$  M with a detection limit of  $2.749 \times 10^{-7}$  M or 0.1469 ppm. The response time ranges from 10–60 seconds, with an average of 40 seconds.

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Research on the Ion-Selective Electrode (ISE) of coated wire-type tartrazine using chitosan as an ionophore has been developed. The variables used in the manufacture of ISE are membrane composition and immersion time. Meanwhile, the basic characteristics of ISE measured are Nernst value, measurement concentration range, detection limit, and measurement response time. The results showed that ISE tartrazine coated wire type had an optimum membrane composition in a mixture of chitosan: PVC: DOP of 3: 34: 63 (% w/w) and a membrane immersion time 20 minutes. The basic characteristics of ISE produce a Nernst value of 20.976 mV/decade. The measurement concentration range is  $1 \times 10^{-7}$  –  $1 \times 10^{-2}$  M with a detection limit of  $2.749 \times 10^{-7}$  M or 0.1469 ppm. The response time ranges from 10-60 seconds, with an average of 40 seconds.