

小型—耐破型 鹽化銀電極의 試作과 그 電位特性

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Making up Small-unbroken Silver Chloride Electrodes and those Potential Characteristics

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Abstract

Many small-unbroken AgCl electrodes of the saturated KCl type and the natural sea water type, for use in sea water, are made up, easily and cheaply, with crystal ball pen holders and pure silver rods. Those electrodes have good stability and reproducibility of potential, the latter electrodes are handled more simply than the former, and the silver rods of those electrodes are better plated with AgCl in saturated KCl solution than in 0.12 N HCl solution.

The potential temperature characteristics of those electrodes are as follow:

1. Saturated KCl type AgCl electrodes;

At the temperature, $t < 35^{\circ}\text{C}$

$$E = -46.4 - 0.34(t - 25), \text{ mV(SCE)}$$

At the temperature, $t > 35^{\circ}\text{C}$

$$E = -49.8 - 0.54(t - 35), \text{ mV(SCE)}$$

2. Natural sea water type AgCl electrodes;

At the temperature, $t < 25^{\circ}\text{C}$

$$E = 6.9 + 0.12(t - 25), \text{ mV(SCE)}$$

At the temperature, $t > 25^{\circ}\text{C}$

$$E = 7.0 - 0.16(t - 25), \text{ mV(SCE)}$$

海中 철강제의 보호를 위한 전기방식에 있어서의 전류밀도 분포에 대하여

신 규 영

On the Current Density Distribution of Cathodic Protection Systems for Marine Steel Structures

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Abstract

This paper theoretically treats the current density distribution of steel plate under sea water.

Upon calculation, the present design method of determining the number and location of the electrodes was found to be unsuitable since the fluctuation rate was too large to perform a good cathodic protection economically.