Effectivity of Nickel-Boron Plating Using Electroless Method to Reduce the Corrosion Rate of A36 Carbon Steel

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ABSTRACT

This study aims to analyse the effectivity of nickel-boron coating using the electroless method on A36 carbon steel's corrosion rate. The analysis will be based on the result of the immersion test done on every specimen in alkaline, acidic, and salt environments. The alkaline environment will use potassium hydroxide (KOH) with a pH of 9 to 12. The acidic environment will use hydrochloric acid (HCl) on a pH of 3 to 6. Lastly, the salt environment will use sodium chloride (NaCl) in a concentration of 3%, 5%, 7%, and 10%. The result shows that electroless nickel-boron plating successfully reduces the corrosion rate of carbon steel by 29.9% in the alkaline environment, 14.6% in the acidic environment, and 17.8% in the salt environment.

Keywords: Electroless Nickel-Boron Coating, Carbon Steel, Corrosion Rate, Industrial Environment.

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