VARIATION OF INHIBITOR LEVEL MORINGA OLEIFERA LEAF POST NORMALIZING ASTM A53 STEEL ON CORROSION RATE AND MICROSURFACE ANALYSIS ON SEA WATER MEDIA

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ABSTRACT

Corrosion is a big problem for industries, especially industries that operate in offshore areas such as oil refineries. Because in the oil refinery industry, almost all of the material is made of metal. one reason, the metal is in direct contact with natural corrosive media, namely sea water. Corrosion cannot be removed but the speed can be reduced. There are many methods to reduce corrosion rates. . The hope is to control the corrosion rate that occurs in materials more efficiently than before. One uses green inhibitor and normalizing the material. In this study used Moringa leaves as inhibitors because they contain phenolic compounds. In the normalizing process carried out holding time for 80 minutes at 900^{O}C which aims to minimize residual stress in the test specimens, namely ASTM A53 steel. Variation of inhibitor rate used was 0%, 5%, 10% and 15%. From some variations in the levels of Moringa leaf extract inhibitors, the lowest corrosion rate was obtained at a variation of 15% inhibitor levels with an average corrosion rate of 0.040 mm / y using the weight loss calculation method and the inhibitor efficiency results of 90.722%. Based on the analysis of the greater the number of inhibitor levels, the smaller the corrosion rate occurs and the greater the percentage of inhibitor efficiency.

Keywords: Moringa leaves, inhibitor, normalizing, corrosion rate, microsurface, ASTM A53 steel