ABSTRACT

CORROSION INHIBITION OF LOW CARBON STEEL C-Mn BY TEA LEAVE EXTRACT (Camellia Sinensis) IN CORROSIVE MEDIUM

By

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Corrosion inhibition of low carbon C-Mn steel by tea leaves extract (Camellia Sinensis) in corrosive medium of hydrocloride acid and natrium cloride of 3% has been investigated. The test was carried out byweight loss method. Corrosion rate was tested on low carbon steel with and without the tea leaves extract for 4 days with concentration of 10, 15, and 20%. The research result showed that the more percentage of tea leaves inhibitor extract, the lower corrosion rate so that capability of inhibition will increase. The biggest inhibition efficiency corrosion occured at concentrations of 20% in HCl and NaCl with efficiency of 66,03% and 32,89% respectively. The X-Ray Diffraction (XRD) result showed that the phase was Fe. Scanning Electron Microscopy (SEM) showed that the grain size and cluster is bigger, hole and crack also shows is lower of with inhibitor than without inhibitor. Energy Dispersive Spectroscopy (EDS) showed that there is Cl element on sample without inhibitor.

Key words: *Camellia sinensis* extract, C-Mn steel, Corrosion inhibition, HCl, and NaCl.