

ABSTRACT

THE EFFECT OF VARIATION CONCENTRATION TO AVOCADO LEAVES (*Persea americana M.*) AS INHIBITOR SS-304 STAINLESS STEEL IN HCL 1M CORROSIVE MEDIUM

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Avocado leaves extract (Persea americana M.) is used as an inhibitor to the sample of SS-304 Stainless steel which cures in HCl 1M Corrosive Medium for 168 hours, the inhibitor concentration variation added 0%, 2%, 4%, 6%, 8% and 10% respectively. The rate sample is measured by using lose-weight method. The results show the lowest samples is 0,37 mm/y of 6% and the highest 10,75 mm/y of 0%. Inhibitor efficiency to the sample SS-304 Stainless steel potrays the effectively progress to 96,55% with 6% concentration. X-Ray Diffaraction Results acquired BCC and FCC with Fe- γ dan Fe- α phase along with SEM that forms agglomeration, cracked, and hole which result on its corrosion. In addition EDS contains Oxygen (O) and Chlorine (Cl) Element which indicate that stainless still has affected by corrotion. The result of characterized and measured show that avocadoleaves effectively as an inhibitor to the samples SS-304 stainless steel in HCl 1M corrosive medium.

Keywords: *SS-304 Stainless steel, avocado leaves extract, inhibitor, XRD, SEM-EDS.*

ABSTRAK

PENGARUH VARIASI KONSENTRASI EKSTRAK DAUN ALPUKAT (*Persea americana M.*) SEBAGAI INHIBITOR PADA BAJA TAHAN KARAT SS-304 DALAM MEDIUM KOROSIF HCl 1M

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Ekstrak daun alpukat (*Persea americana M.*) digunakan sebagai inhibitor pada sampel baja SS-304. Perendaman sampel baja dilakukan dalam medium korosif HCl 1M selama 168 jam dengan variasi konsentrasi inhibitor 0%, 2%, 4%, 6%, 8% dan 10%. Laju korosi dihitung dengan menggunakan metode kehilangan massa. Diperoleh hasil perhitungan laju korosi terendah pada sampel baja SS-304 dengan konsentrasi inhibitor 6% sebesar 0,37 mm/y dan laju korosi tertinggi pada sampel baja SS-304 dengan konsentrasi inhibitor 0% sebesar 10,75 mm/y. Efisiensi inhibitor paling optimum pada sampel baja SS-304 dengan konsentrasi inhibitor 6% sebesar 96,55%. Hasil karakterisasi XRD menunjukkan bahwa struktur kristal yang terbentuk merupakan BCC dan FCC dengan fasa Fe- α dan Fe- γ . Karakterisasi SEM menunjukkan struktur permukaan sampel baja retakan serta lubang yang merupakan produk korosi. Karakterisasi EDS pada sampel baja terdapat unsur Oksigen (O) dan Clorin (Cl) yang mengindikasikan bahwa sampel baja telah terkorosi. Hasil karakterisasi dan perhitungan laju korosi menunjukkan bahwa ekstrak daun alpukat efektif sebagai inhibitor pada baja SS-304 dalam medium korosif HCl 1M.

Kata kunci: Baja SS-304, ekstrak daun alpukat, inhibitor, XRD, SEM-EDS.