Title of Article: Inhibitive properties of Carica papaya leaf extract on Aluminium in 1.85M HCl.

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Abstract: The inhibition of aluminium metal corrosion in 1.85 M hydrochloric acid solution using extract of Carica papaya leaf was studied using gasometric technique. Aluminium coupons were immersed in test solutions of un-inhibited 1.85 M HCl and those containing extract concentrations of 10 %, 20 %, 30 %, 40 % and 50 % (v/v) at room temperature. The volume of hydrogen gas evolved as a result of the rate of reaction between aluminium coupons and the acid extracts was recorded. The inhibition efficiency of the extract was determined and the adsorption isotherm of the process was estimated using Temkin, Freundlich, Frumkin and Langmuir adsorption theories. The microstructure examination was also determined. The result of the investigation induced that the Carica papaya leaf extract retarded the acid induced corrosion of aluminium with a reduction in the volume of hydrogen gas evolved per increasing extract concentrations. The adsorption studies revealed Langmuir isotherm as the best model for the adsorption of Carica papaya extract \( (R^2 = 1) \) on aluminium surface. The adsorption result with the microstructure of the coupons implied an involvement of chemisorption process in the interaction of the extract with aluminium metal.