Use of *Cynara scolymus* as Green Corrosion Inhibitor for Carbon Steel in Sulfuric Acid

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doi: 10.20964/2016.09.18

*Received: 29 April 2016 / Accepted: 25 June 2016 / Published: 7 August 2016*

A study on the use of *Cynara scolymus* (*C. scolymus*) as a green corrosion inhibitor for 1018 carbon steel in 0.5 M sulfuric acid has been carried out by using weight loss tests, potentiodynamic polarization curves and electrochemical impedance spectroscopy measurements. It was found that *C. scolymus* is a good corrosion inhibitor with its efficiency increasing with the inhibitor concentration but it decreases with an increase in the temperature. *C. scolymus* is a mixed type of inhibitor, which is physically adsorbed on to the metal surface by following a Temkin adsorption isotherm. It forms a protective film by the contained compounds such as fatty acids, phenolics as quinic acid and sterols such as stigmasterol and γ-sitosterol.

**Keywords:** Carbon steel, acid corrosion, green inhibitor.

FULL TEXT

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