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## ASSESSMENT OF CORROSION INHIBITORY EFFECT OF *Ruta chalepensis* FLAVONOID EXTRACTS ON API 5L X52 STEEL IN 1M HCL MEDIUM

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### Abstract

The development of green eco-friendly inhibitors for the corrosion of metallic surfaces in acid media is still considered as a major challenge and target for corrosion-mitigation engineers. We have prepared in this work 4 different extracts from the plant *Ruta Chalepensis* using methanol, chloroform, ethyl acetate, and aqueous ethyl acetate solvent systems. The flavonoids content, as well as the other oxygenated compounds, in the 4 extracts was carefully screened using the gas chromatographic–mass spectrometry (GC-MS) technique. The corrosion inhibition property of all extracts for API 5L X52 steel in the hydrochloric acid medium has been carefully assessed using electrochemical techniques and surface-morphological characterizations. Our results revealed promising corrosion-inhibition properties for the methanol and chloroform extracts compared to other extracts and suggest potential applicability for the flavonoids from the studied plant as green corrosion inhibitors for steel substrates in acid media.

*Key words:* API 5L X52 steel, corrosion inhibitors, flavonoids, *Ruta Chalepensis*

*Received:* February, 2018; *Revised final:* February, 2018; *Accepted:* October, 2018; *Published in final edited form:* September, 2019

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