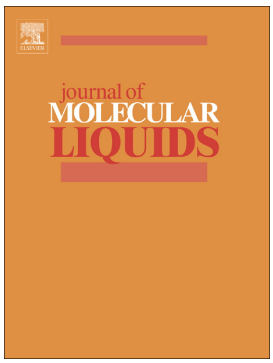

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PII: S0167-7322(17)35094-8
DOI: doi:10.1016/j.molliq.2018.04.153
Reference: MOLLIQ 9171

To appear in: *Journal of Molecular Liquids*

Received date: 26 October 2017
Revised date: 30 March 2018
Accepted date: 29 April 2018

Please cite this article as: Paulina Arellanes-Lozada, Octavio Olivares-Xometl, Natalya V. Likhanova, Irina V. Lijanova, Jorge R. Vargas-García, Raquel E. Hernández-Ramírez , Adsorption and performance of ammonium-based ionic liquids as corrosion inhibitors of steel. Journal of Molecular Liquids(2017), doi:10.1016/j.molliq.2018.04.153

Adsorption and Performance of Ammonium-Based Ionic liquids as Corrosion Inhibitors of Steel

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ABSTRACT

Methyltrioctylammonium methyl sulfate (TMA) and trimethyltetradecylammonium methyl sulfate (TTA) were synthetized as novel quaternary-ammonium-derived ionic liquids (ILs) in order to be evaluated as corrosion inhibitors (CIs) of API-X52 steel in 1 M HCl. Electrochemical techniques were used to evaluate the anticorrosive effect, finding that TMA and TTA worked as mixed-type CIs and inhibited the corrosion process depending on the temperature, immersion time and IL concentration, being remarkably effective at 40 °C, which was attributed to the high thermal stability of the methyl sulfate anions. X-ray

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