Accepted Manuscript

Adsorption and performance of ammonium-based ionic liquids as corrosion inhibitors of steel

Paulina Arellanes-Lozada, Octavio Olivares-Xometl, Natalya V. Likhanova, Irina V. Lijanova, Jorge R. Vargas-García, Raquel E. Hernández-Ramírez

PII: S0167-7322(17)35094-8

DOI: doi:10.1016/j.molliq.2018.04.153

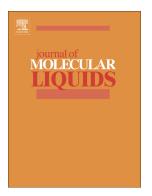
Reference: MOLLIQ 9171

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

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



ACCEPTED MANUSCRIPT

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

Paulina Arellanes-Lozada^{a,*}, Octavio Olivares-Xometl^a, Natalya V. Likhanova^b, Irina V. Lijanova^c, Jorge R. Vargas-García^d, Raquel E. Hernández-Ramírez^e.

- ^a Benemérita Universidad Autónoma de Puebla, Facultad de Ingeniería Química, Av. San Claudio y 18 sur, Ciudad Universitaria. Col. San Manuel, 72570, Puebla, Pue. México.
- ^b Instituto Mexicano del Petróleo, Gerencia de Ingeniería de Recuperación Adicional, Eje Central Lázaro Cárdenas No. 152, Col. San Bartolo Atepehuacán, 07730, Ciudad de México, México.
- ^c Instituto Politécnico Nacional, CIITEC, Cerrada Cecati S/N, Colonia Santa Catarina de Azcapotzalco, 02250, Ciudad de México, México.
- ^d Instituto Politécnico Nacional, Centro de Nanociencias y Micro y Nanotecnologías, Av. Luis Enrique Erro S/N, Unidad Profesional Adolfo López Mateos, Zacatenco, 07738, Ciudad de México, México.
- ^e Tecnológico de Estudios Superiores de Coacalco, 16 de septiembre 54, Col. Cabecera municipal, Coacalco de Berriozábal, 55700, Estado de México, México.

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

E-mail address: paulina.arellanes.lozada@gmail.com (P. Arellanes-Lozada)

^{*}Corresponding author.

Download English Version:

https://daneshyari.com/en/article/7841832

Download Persian Version:

https://daneshyari.com/article/7841832

<u>Daneshyari.com</u>