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Some quinazoline derivatives as corrosion inhibitors for copper in HNO_3 solution

A.S. Fouda[a]*, M. Abdallah[b], R.A. El-Dahab[b]

[a]*Chemistry Department, Faculty of Science, El-Mansoura University, El-Mansoura 35516, Egypt*
Tel. +20 50 2365730; Fax +20 50 2246781; email: asfouda@mans.edu.eg
[b]*Chemistry Department, Faculty of Science, Benha University, Benha, Egypt*

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ABSTRACT

The inhibition effect of some quinazoline derivatives on the corrosion of copper in 2 M HNO_3 has been investigated by weight loss and polarization studies. The inhibition efficiency increased with increase in inhibitor concentration but decreased with the increase in temperature. The thermodynamic functions of dissolution and adsorption processes were calculated. The polarization measurements indicated that the inhibitors are of mixed-type. The kinetic parameters of corrosion of copper in HNO_3 solution have been determined. The adsorption of the compounds was found to obey Frumkin's adsorption isotherm. It is observed that the combination between these quinazoline derivatives and halide ions shows good inhibition efficiency. The results obtained from weight loss and galvanostatic polarization are in good agreement.

Keywords: Corrosion; Copper; HNO_3; Quinazoline derivatives

* Corresponding author.