عنوان مقاله:

Synthesis of New Azo Compounds Based on TrÖger's Base Contain Thiadiazole Amine and Study Anti-Corrosive Activity

محل انتشار:

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خلاصه مقاله:

A new series of azo compounds derived from TrÖger's base containing the thiadiazole amine were synthesized. The thadiazole amine was synthesized from [methanodibenzo ۶H,۱۲H-۵,۱۱- [b, f] [۱,۵] diazocine-۲,۸-dicarboxylic acid] and thiosemicarbazide in only two steps. The diazonium salt was derived from the thiadiazole amine, and then coupled with of different phenol compounds (β-naphthol, hydroquinone, catechol, resorcinol, and α-naphthol) to form the azo compounds. The azo compounds were confirmed structure by a range of techniques, including solubility testing, melting point, FT-IR spectroscopy, nuclear magnetic resonance spectroscopy, and mass spectrometry. The weight loss method was followed to study the anti-corrosion activity of the compounds prepared on carbon steel from hydrochloric acid in a solution (۰.۵ M). Immersion times were also evaluated at a constant temperature of ۲۹۸ K at two inhibitory concentrations (۰.۰۰۳ M and ۰.۰۰۵ M). The results obtained in weight measurements and evaluation of the effectiveness of azo compounds for carbon corrosion will be used in acidic environments. New results were obtained with differences in the inhibition efficiency between the compounds. In addition, an inhibition efficiency of (۹۱%) and a lower corrosion rate (۰.۷۳۷) was obtained for compound A۴, and compound A۵ showed the lowest inhibition efficiency (۷۸%) and the highest corrosion rate (۱.۶۹۵). Since the compounds manufactured in this way has good results, further analysis of the remaining compounds is needed, and their inhibitory efficiency is measured.

کلمات کلیدی:

TrÖger' s base, Azo dye, Thiadiazole amine, Diazonium salt, anti-corrosion