عنوان مقاله:

Investigation on the Inhibition Performance of an Imidazoline Base Inhibitor on CO۲ Corrosion of Carbon Steel

محل انتشار:

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تعداد صفحات اصل مقاله: 6

نویسنده:

خلاصه مقاله:

One of the main problems in the oil and gas industry is CO۲ corrosion which is known as sweet corrosion. The use of corrosion inhibitors is one of the most effective methods for corrosion control in the oil and gas industry. In this paper, the mechanism and effect of concentration of an imidazoline base derivative on CO۲ corrosion of carbon steel was investigated. For this purpose, the corrosion behavior of a plain carbon steel in a NACE standard solution at ambient temperature was studied. The open circuit potential (OCP) and potentiodynamic polarization measurements in presence of different concentrations of imidazoline inhibitor were conducted to determine the corrosion rate of samples. . The results showed that the imidazoline base inhibitor reduced the kinetics of anodic reactions by adsorption on the metal surface and blocking the active corrosion sites . Also, it was observed that ۱۵ ppm of imidazoline inhibitor provided the optimum inhibition efficiency of ۸۹.۸۷%

کلمات کلیدی:

nhibitor, Imidazoline, Sweet corrosion, CO۲ Corrosion,., ممانعت کننده, ایمیدازولین,
خوردگی شیرین, خوردگی CO۲