Steel XC38 protection against corrosion by an organic compound (DHASC) in hydrochloric acid medium

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Abstract : Corrosion in industrial environments is a major factor limiting the lifespan of materials, causing many replacement costs and lost productivity. For a judicious selection of materials in particularly aggressive environments, one must often use standardized laboratory tests and / or factory whose validity and reliability have not always been clearly demonstrated. Corrosion inhibitors are a means of struggle against corrosion of metals and alloys relatively recent. The originality of this method is the fact that the anti-corrosion treatment is not done on the metal itself but through the corrosive environment. The inhibitor molecules may act on different mechanisms, thus giving them dependent inhibition material performance and study environment. In this work we have synthesized and characterized a novel organic compound (DHASC) To identify it, we appealed to the physicochemical methods of analysis: IR, UV-Vis, NMR 1H and voltammetry cyclic organic medium (DMF-Bu4NPF6 0.1M) was platinum electrode. The study of the inhibitory effect of the ligand on the corrosion of carbon steel X52 in hydrochloric acid medium and in the presents inhibition character. The inhibitory efficacy in hydrochloric acid medium, it reaches 69% at a concentration of 10-5M. The application of this new ligand synthesized in everyday life, the water treatment industry in the fight against corrosion.

Keywords : Corrosion Protection Steel XC38, inhibitor