

Inhibition of Pipelines Corrosion Using Natural Extracts

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Abstract : The present work is aimed at examining carbon steel oil pipelines corrosion using three natural extracts (Eruca Sativa, Rosell and Mango peels) that are used as inhibitors of different concentrations ranging from 0.05-0.1wt. %. Two sulphur compounds are used as corrosion mediums. Weight loss method was used for measuring the corrosion rate of the carbon steel specimens immersed in technical white oil at 100°C at various time intervals in absence and presence of the two sulphur compounds. The corroded specimens are examined using the chemical wear test, scratch test and hardness test. The scratch test is carried out using scratch loads from 0.5 Kg to 2.0 Kg. The scratch width is obtained at various scratch load and test conditions. The Brinell hardness test is carried out and investigated for both corroded and inhibited specimens. The results showed that three natural extracts can be used as environmentally friendly corrosion inhibitors.

Keywords : inhibition, natural extract, oil pipelines corrosion, sulphur compounds

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