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Electrochemical Corrosion of Steels in Distillery Effluent

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Abstract : The present work relates to the corrosivity of distillery effluent and corrosion performance of mild steel and stainless steels SS304L, SS316L, and 2205. The report presents the results and conclusions drawn on the basis of (i) electrochemical polarization tests performed in distillery effluent and laboratory prepared solutions having composition similar to that of the effluent (ii) the surface examination by scanning electron microscope (SEM) of the corroded steel samples. It is observed that pH and presence of chloride, phosphate, calcium, nitrite and nitrate in distillery effluent enhance corrosion, whereas presence of sulphate and potassium inhibits corrosion. Among the materials tested, mild steel is observed to experience maximum corrosion followed by stainless steels SS304L, SS316L, and 2205.

Keywords : corrosion, distillery effluent, electrochemical polarization, steel
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