Electrochemical Analysis of AA6082 Aluminium Alloy in Chloride Media

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AA6082 aluminium alloy is widely used in the automotive industry. The aim of this study was to report on the corrosion behaviour of this alloy in 1 and 5 wt.% NaCl solutions at 50 °C and to compare it to the results in the same solution at room temperature, using the weight loss and electrochemical techniques. The chosen concentration and temperature range are the most severe conditions in automotive corrosion tests. The localised and general corrosion rates are higher for the highest of the two temperatures tested. At both temperatures, corrosion occurs according to a kinetic-controlled process.

Keywords: corrosion; interfaces; aluminium alloy; weight loss; electrochemical impedance spectroscopy; cyclic polarisation;

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