中国腐蚀与防护学报 2007, 27(2) 93-96 DOI: ISSN: 1005-4537 CN: 31-1421/TG

论文

模拟偏析相Al2Zn在3％NaCl溶液中的电化学行为

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摘要：

根据Al-Zn-In合金中偏析相Al 2Zn的元素组成熔炼出模拟偏析相合金，测试了模拟偏析相合金和Al-Zn-In合金的自腐蚀电位、极化曲线和交流阻抗谱.结果表明：相对于Al-Zn-In合金，模拟偏析相Al 2Zn自腐蚀速率小，自腐蚀电位负，呈现阳极性；Al-Zn-In合金中的偏析相Al 2Zn与合金基体构成微区电偶腐蚀，受到阳极极化优先溶解，引起阳极电流效率的损失.

关键词： Al-Zn-In Al2Zn 偏析相 电化学行为

ELECTROCHEMICAL BEHAVIOR OF THE SIMULATED Al2Zn SEGREGATION IN 3％ NaCl SOLUTION

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Abstract:

Simulated Al2Zn segregation alloys were developed according to the average elements distribution of zinc enriched zones of Al-Zn-In alloy. Open circuit potential against time,polarization curves,and electrochemical impedance spectroscopy were employed to study the electrochemical behavior of Al-Zn-In and simulated Al 2Zn alloys. The results showed that the simulated Al2Zn alloy exhibits a more electronegative open circuit potential and a lower self-corrosion rate as compared with those of Al-Zn-In alloy. However,the Al2Zn segregation in Al-Zn-In alloy can be attributed to the formation of micro-local galvanic corrosion that leads to the preferential dissolution of Al 2Zn and the loss of current efficiency.

Keywords: Al-Zn-In Al2Zn segregation electrochemical behavior

收稿日期 2005-10-14 修回日期 2005-12-20 网络版发布日期 2007-04-25

DOI:

基金项目:

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