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### 柠檬酸、硝酸铵溶液中冷轧钢的腐蚀行为

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### Corrosion behavior of cold rolled steel in citric acid and NH<sub>4</sub>NO<sub>3</sub> solution

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全文: PDF (310 KB) HTML ( KB) 输出: BibTeX | EndNote (RIS) 背景资料

**摘要** 利用失重法、动电位极化曲线法研究了室温(20~25℃)下0.01~0.10 mol/L柠檬酸、硝酸铵溶液中冷轧钢的腐蚀行为. 结果表明,柠檬酸溶液中,冷轧钢的腐蚀速度随柠檬酸浓度的增加而增大,阴、阳两极反应速度也随浓度的增大而加快,但当柠檬酸浓度为0.10 mol/L时,阳极反应受到抑制.硝酸铵溶液中,浓度为0.01~0.06 mol/L时,钢的腐蚀速度、阴阳两极反应均随浓度的增加而增大;硝酸铵浓度0.06~0.10 mol/L时,浓度增加对腐蚀速度和阴极反应影响微弱,而对阳极反应产生抑制作用.详细探讨了腐蚀机理.

**关键词:** 钢 柠檬酸 硝酸铵 腐蚀

**Abstract:** The corrosion behavior of cold rolled steel in 0.01~0.10mol/L citric acid and NH<sub>4</sub>NO<sub>3</sub> solution was studied by weight loss and polarization curve methods.The results show that the corrosion rate of cold rolled steel increases with the increase of citric acid concentration.In citric acid solution,both anodic and cathodic reactions were accelerated with the increase of acid concentration.However,the anodic reaction was inhibited when the citric acid concentration was 0.10mol/L.In 0.01~0.06mol/L NH<sub>4</sub>NO<sub>3</sub> solution,the corrosion rate,anodic reaction and cathodic reaction increased with the increase of acid concentration.In 0.06~(0.10mol/L) NH<sub>4</sub>NO<sub>3</sub> solution,both the corrosion rate and cathodic reaction did not change with the increase of acid concentration obviously,while the anodic reaction was inhibited with the increase of acid concentration.The corrosion mechanism was studied.

**Key words:** steel citric acid NH<sub>4</sub>NO<sub>3</sub> corrosion

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