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铝合金碱性抛光液及其工艺条件

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摘要: 由于铝合金在碱性溶液中腐蚀速度极大,致使抛光时间不能过长;此外,由于碱性溶液抛光后表面的光亮不大,所以降低铝的腐蚀速度、提高抛光光亮是碱性化学抛光的关键.作者对铝合金的几种新型碱性化学抛光液及其工艺条件进行了研究.试验结果表明:添加由硫脲(或钼酸铵或六次甲基四胺)、硅酸钠、十二烷基硫酸钠构成的复合缓蚀剂能大大提高铝合金抛光质量,同时可抑制碱雾的产生.铝合金碱性抛光液的较佳配方与工艺条件为:NaOH300 g/L, NaNO₃250 g/L, 硫脲20 g/L, 硅酸钠10 g/L, 十二烷基硫酸钠1.5~1.8 g/L, 温度60~70℃, 抛光时间80~100 s.

关键字: 铝合金; 化学抛光; 缓蚀剂; 光泽度

Alkali chemical polishing solutions for aluminum alloys and the technological conditions

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Abstract: The corrosion rate of aluminum alloys in alkali chemical polishing solutions was so great that the polishing could not last long, and thus the surface of aluminum alloys could not be polished well. Therefore reducing corrosion rate of aluminum alloys in alkali chemical polishing solutions and increasing the luster of chemical polishing were the keys of alkali chemical polishing. The research results of several late-model alkali chemical polishing solutions for aluminum and their technological conditions for aluminum were discussed in this paper. The research results indicated that, the addition of the complex corrosion inhibitors composed of thiourea(or ammonium molybdate, or hexamethylene-teramine), sodium silicate, sodium lauryl sulfate increased the luster of aluminum foil, and decreased the corrosion rate and the alkali fog was controlled. The best alkali chemical polishing solution for aluminum and its technological conditions are as follows.300 g/L sodium hydroxide, 250 g/L sodium nitrate, 20 g/L thiourea, 10 g/L sodium silicate, 1.5~1.8 g/L sodiumlauryl sulfate, at 60~70℃, polishing time 80~100 s.

Key words: aluminium alloys; chemical polishing; corrosion inhibitors; luster

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