

37 - 33 Effects of Na₂SiO₃ on anodization of Mg-Al-Zn alloy in 3 M KOH solution

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The anodic behavior of Mg-Al-Zn alloy (AZ91D) under low potential electrolysis in 3 M KOH solutions was studied with and without addition of 0.5-5 M Na₂SiO₃. Anodic films incorporating silicon were formed during electrolysis, and the films formed under constant potential electrolysis at 4 V in 3 M KOH solution with Na₂SiO₃ were uniform and thicker than the films formed without Na₂SiO₃. A few at% of silicon was present as Mg₂SiO₄ in the films, although the main compound was Mg(OH)₂. The corrosion resistance of the films formed in solutions with Na₂SiO₃ increased in an anodic polarization test in 0.1 M KCl solution.

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