

Pb及Pb-7w/O Sb合金在氧析出电位区生长的阳极膜

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摘要 分别测量了Pb及Pb-7w/O Sb在4.5mol.dm⁻³H₂SO₄(30℃)中于1.3和1.5V(vs.Hg/Hg₂SO₄/4.5mol.dm⁻³H₂SO₄)下在不同时间生长的阳极膜的交流阻抗谱,

并使用线性电位扫描法分析了上述阳极膜的相组成。讨论了上述阳极膜进行的电化学反应的机理,并据此提出它们的等效电路。实验结果表明上述阳极膜的真实表面积随生长时间而增加,该膜多孔,主要由外层为PbO₂的PbO.PbSO₄微粒组成,锑能显著抑制PbO₂的生长,特别是在1.3V时。

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Anodic films grown at oxygen evolved potential range on Pb and Pb-7W/O Sb alloy

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Abstract Anodic films formed on Pb and Pb-7wt.% Sb in 4.5 mol.dm⁻³ H₂SO₄(30°C) at both 1.3 V and 1.5 V (vs. Hg/Hg₂SO₄/4.5 mol.dm⁻³ H₂SO₄) were studied, resp., using a.c. impedance method and linear potential sweep method. The latter method was used for analyzing the phase composition of the mentioned films. The mechanisms of the electrochem. reactions at the films are discussed, and their equivalent circuits were suggested accordingly. The experimental results show that the true surface area of the films increase with increasing of the formation time. The films may be porous and consist of PbO₂ particles, the inner part of which are PbO.PbSO₄. Sb retards the growth of PbO₂, especially at 1.3 V.

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