

알칼리 용액에서 알루미늄 부식에 미치는 Cl^- 와 OH^-
이온의 영향에 관한 연구

The Effects of Cl^- and OH^- on the Corrosion
of Pure Aluminium in Alkaline Solutions

안상호, 변수일, 문성모
Sang-Ho Ahn, Su-Il Pyun and Sung-Mo Moon

Department of Materials Science and Engineering,
Korea Advanced Institute of Science and Technology,
Daejeon 305-701, Korea

In this work, the effects of Cl^- and OH^- on the corrosion of pure aluminium have been studied in sodium hydroxide solutions by using potentiodynamic polarization experiment and abrading electrode technique. Potentiostatic current transients were obtained just after interrupting the abrading action and after stepping up the potential from open-circuit potential to anodic potential. It was found that below pitting potential passive current density decreased with increasing Cl^- concentration, while it increased significantly with increasing OH^- concentration. The repassivation rate increased with increasing Cl^- concentration and appeared to be larger at bare surface obtained after interrupting the abrading action than at native oxide-covered surface obtained after stepping up the potential. Based upon the experimental results, it is suggested that Cl^- ion forms transitory compounds within the oxide film which improves resistance of the film against corrosion of aluminium before pitting occurs.

References

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