

Microbial Influenced Corrosion on Aluminium by *Pseudomonas fluorescens* in different saline water

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Abstract : Microbialinfluenced corrosion is a major issue for some industries. The ooccurance of corrosion deposits were related to the activities of microorganism. *Pseudomonas sp.* could affect the rate of metal corrosion due to this bacteria can produce polymer during biofilm formation. The aims of this research were to determine the corrosion rate on aluminium alloy (AA)6063 in three of salinity (33, 35 and 37‰) and to determine MIC rate was caused by *Pseudomonas fluorescens*. Aluminium 6063 specimens were exposed to seawater media containing the aerobic bacterium *P.fluorescens*. The weight loss method was used in this research. The results showed the corrosion rate, without bacteria, on AA6063after immersion in salinity of 33, 35 and 37‰ at day 28 were 0.5383, 0.6553 and 0.7021 mm/year, respectively. The higher salinity can cause heavy pitting and thus cause pitting corrosion on alunimium. The highest MIC rateon AA6063was1.1701mm/year at day 28in salinity of37‰by *P. fluorescens*. Meanwhile, the MIC at salinity of 33 and 35‰ were 0.7021 and 1.0765 mm/year at similar day respectively. Based on macrostructure and microstructure, it depicts pitting corrosion on AA6063 can be accelerated by presence of *P.fluorescens*. In conclusion, *P. fluorescens*has a role to inecrease of pitting corrosion rate on AA 6063.

Keywords : bacteria, corrosion, MIC rate, marine environment, salinity.

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