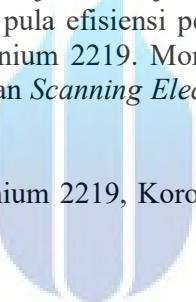


ABSTRAK

Logam paduan aluminium 2219 memiliki kekuatan mekanis yang baik, namun memiliki ketahanan korosi yang lebih rendah daripada paduan aluminium seri lainnya di lingkungan yang lembab. Dalam penelitian ini dianalisis laju korosi aluminium 2219 dengan metode kehilangan massa atau perendaman menggunakan standar ASTM G31-72. Larutan yang digunakan sebagai media perendaman adalah air hujan yang setelah diperiksa menggunakan kertas laksus menunjukkan air hujan di Kota Tangerang memiliki pH 6. Sekaligus dilaksanakan analisis mengenai efisiensi penggunaan *alodine* 1200S dan *alodine* 1500 sebagai inhibitor aluminium 2219. Spesimen yang digunakan adalah aluminium paduan 2219 T62, dipotong dengan dimensi 50 mm × 25 mm dengan tebal 1,8 mm dan dibersihkan dari kotoran dan korosi yang mungkin ada menggunakan kertas amplas kemudian dibersihkan menggunakan larutan kimia (*pickling*). Kemudian spesimen dibagi ke dalam tiga kelompok di mana satu kelompok diberi perlakuan *alodine* 1200S, satu kelompok lagi diberikan perlakuan *alodine* 1500, sedangkan satu kelompok lagi tidak diberi perlakuan inhibisi. Setelah itu, ketiga kelompok spesimen direndam dalam larutan air hujan dengan variasi perendaman selama 336 jam, 504 jam, dan 672 jam kemudian dihitung laju korosinya sekaligus dihitung pula efisiensi penggunaan *alodine* 1200S dan *alodine* 1500 sebagai inhibitor aluminium 2219. Morfologi dan komposisi kimia spesimen kemudian diteliti menggunakan *Scanning Electron Microscopic – Energy Dispersive X-Ray (SEM-EDX)*.

Kata Kunci: Paduan Aluminium 2219, Korosi, Kehilangan Massa, *Alodine* 1200S, *Alodine* 1500



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**ANALYSIS OF CORROSION INHIBITORS ALODINE 1200S
AND ALODINE 1500 ON ALUMINUM ALLOY 2219
IN RAINWATER MEDIUM USING
THE MASS LOSS METHOD**

ABSTRACT

Aluminum alloy 2219 has good mechanical properties, but has lower corrosion resistance than other series aluminum alloys in humid environment. In this study, the corrosion rate of aluminum alloy 2219 was analyzed by the method of mass loss or immersion using the ASTM G31-72 standard. The solution used as the immersion medium was rainwater which after being examined using litmus paper showed that rainwater in Tangerang City had a pH of 6. Simultaneously carried out an analysis of the efficiency of the use of alodine 1200S and alodine 1500 as an aluminum alloy 2219 inhibitor. The specimen used is aluminum alloy 2219 T62, cut to dimensions of 50 mm × 25 mm with a thickness of 1,8 mm and cleaned of dirt and corrosion that might exist using sandpaper and then cleaned using a chemical solution (pickling). Then the specimens were divided into three groups where one group was given alodine 1200S treatment, another group was given alodine 1500 treatment, while the other groups was not given any inhibition treatment. After that, the three groups of specimens were immersed in a rainwater solution with variations of immersion for 336 hours, 504 hours, and 672 hours, then the corrosion rate was calculated and the efficiency of the use of alodine 1200S and alodine 1500 as an aluminum alloy 2219 inhibitor was also calculated. The morphology and chemical composition of the specimens were then investigated using Scanning Electron Microscopic – Energy Dispersive X-Ray (SEM-EDX).

Keywords: Aluminum Alloy 2219, Corrosion, Weight Loss, Alodine 1200S, Alodine 1500

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