INTISARI

Tujuan penelitian ini adalah untuk mengamati terjadinya proses korosi aluminium (Al) dalam lingkungan larutan natrium hidroksida (NaOH). Peneliti juga mencoba mengamati hubungan yang terjadi antara; konsentrasi larutan, lama pengkorosian, diameter, maupun tegangan benda uji setelah proses pengkorosian.

Untuk mengamati korosi aluminium dalam lingkungan larutan NaOH, maka digunakan beberapa kondisi prosentase larutan dan waktu yang berbeda. Kondisi prosentase larutan adalah; 5%, 10%, 15%, 20%, 25% dan 30% NaOH. Sedangkan kondisi interval waktu yang digunakan adalah 1 jam, 5,5 jam dan 10 jam. Sebelum proses pengkorosian dilakuka, terlebih dahulu diadakan uji komposisi terhadap benda yang akan diuji.

Dari penelitian proses pengkorosian ini diperoleh beberapa hasil berupa; konsentrasi larutan NaOH sebagai lingkungan pengkorosian, sangat berpengaruh terhadap diameter akhir. Semakin tinggi konsentrasi larutan akan menyebaban penurunan diameter akhir. Temperatur mengalami fluktuasi dalam lingkungan konsentrasi NaOH yang berbeda-beda. Temperatur akan mengalami peningkatan pada menit-menit awal tapi kemudian akan mengalami penurunan bahkan akan kembali ke suhu ruangan setelah 10 jam pengkorosian. Sementara semakin tinggi konsentrasi larutan akan menyebabkan temperatur akan meningkat. Pada kondisi lama pengkorosian 1 jam tegangan cenderung meningkat pada konsentrasi 5% - 10%. Kemudian akan menurun pada kondisi konsentrasi larutan di atas 15%. Hal tersebut berbeda dengan kondisi lama pengkorosian 5,5 jam dan 10 jam. Semakin lama waktu pengkorosian akan menyebabkan penurunan tegangan. Biaya yang digunakan untuk pengurangan diameter bahan melalui proses pengkorosian, relatif murah dibandingkan dengan pekerjaan mekanik. Namun demikian masih membutuhkan pengerjaan lanjutan.

ABSTRACK

The objective of research was to observe the event of aluminium (Al) corrosion processing in natrium hydroxide (NaOH) solution environment. I also tried to observe the relationship between solution concentration, corrosion length, diameter, and test tention after corrosion processing.

To observe the Al corrosion in NaOH solution environment, I used some different conditions of solution percentages and times. The solution percentage condition were 5%, 10%, 15%, 20%, 25%, and 30% NaOH. Whereas, conditions of time intervals used were 1 hour, 5,5 hour, and 10 hour. Before corrosion processing, I tested composition against an object to be tested.

From the research of corrosion process, I got some results, such as, solution concentration of NaOH as corrosion environment, highly having effect on final diameter, higher concentration of solution which would cause decrease in final diameter. Temperature experienced fluctuation in different NaOH concentration environment. The temperature would increase in earlier minutes, but, then it would decrease, even it would return to spatial temperature after 10 hour corrosion processing. Meanwhile the higher concentration of solution would cause the temperature to increase. In conditions of corrosion procession for 1 hour, the tention tended to increase on concentration of 5% - 10%. Then, it would decrease in conditions of solution concentration above 15%. It was different from condition of corrosion processing length of 5,5 hour ang 10 hour. The longer time of corrosion processing would cause decrease in tension. Cost used for minimazing diameter of material through process of corrosion was relatively lower than mechanical work. However, it was necessary to have next job.