

***ANALYSIS OF FACTORS THAT INFLUENCE ON THE REDUCTION OF  
SULPHATE CONTENT IN SEAWATER USING FULL FACTORIAL  
EXPERIMENT DESIGN METHOD***

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***Abstract***

*Seawater is the main ingredient for making salt. Seawater contains various types of minerals and impurities. Sulfate is one of the impurities in the salt of seawater. The sulfate content in seawater can be reduced by adding an adsorbent or binder for seawater impurities that is commonly used, namely activated carbon.*

*Reduction of sulfate content in seawater was carried out through factorial design experiments to see the optimal results of the response using the full factorial experimental design method. The full factorial experimental design is a transformation from the true experimental design which observes the possibility of moderator variables affecting the independent variable or treatment of the dependent or variable outcome. The factors in this experiment are the type of activated carbon, the weight of the activated carbon, and the concentration of lime. Grouping on each factor is done based on the number of repetitions or replications. The response studied through this experiment is the percentage of sulfate reduction. The results of the analysis using the full factorial experimental design method that the most influential factor on sulfate reduction is the activated carbon weight factor 50 mg with a sulfate reduction percentage of 20.613% and a lime concentration factor of 30 l with a sulfate reduction percentage of 19.162%. The optimal response for sulfate reduction was 24.343% which came from activated carbon type B, active carbon weight 50 mg and lime concentration 50 l.*

***Keywords:*** salt, experimental design, seawater, full factorial