

# **The effect of using Coagulants and Coagulants Aid (Porcelanite and Silica Jel) in improving water efficiency treatment**

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## **Abstract**

Many studies were achieved in order to improve water efficiency treatment and to remove high turbidity by using Coagulants like Alum with Coagulants aid like polymers. Many researches explain the effect of these polymers on the removal of high water turbidity over the past years attempting to improve the coagulation and flocculation processes. Several experiments were performed to investigate the effect of using other types of coagulants aid on the percentage removal of turbidity and to find the optimum dosage of coagulant (alum) and coagulant aid. The coagulants used in this study were alum, Porcelanite and Silica Gel which are used in general company of ceramic and glass factory in Ramadi City as liquid state. The initial turbidity at 450 NTU was used with floc growth and floc formation was studied for Kaolinite 10  $\mu\text{m}$  particles size. The results were obtained and plotted to show the effect of using different dosages of the mentioned coagulants on the residual and percentage removal of turbidity. Also, other parameters like TDS, Ec, pH and salt were calculated. The results indicated that the efficient coagulant type with dose of 30 mg/l is 4.56 NTU residual turbidity and removal percentage of 98.98% by using alum with silica, with the percentage of alum is 60% and 40% of Silica and pH value 7.66.