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# Study of Corrosion Inhibition of Mild Steel in 0.01M HCl by Corrosion Inhibitors: A comparative Study

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**Abstract :** Mild steel is the raw material for the construction and fabrication of weapons and equipments. In order to study synergistic effect, various combinations of caffeine, acetamide and benzalkonium chloride (BKC) were investigated as corrosion inhibitors for mild steel. Corrosion rate and percentage inhibition efficiency of various combination of corrosion inhibitors(100,200,300 ppm of different concentration of caffeine, acetamide and benzalkonium chloride (BKC) in 0.01 M HCl) at two different temperature 298K and 318K by weight loss method, SEM. The results obtained revealed the value of inhibition efficiency decreases to a large rate in case of caffeine and acetamide but to a slight decrease in case of BKC with the increase in temperature. The protection of metals from corrosion is analyzed by technologies such as weight loss, Scanning Electron Microscope (SEM).
**Keywords :** Corrosion inhibitors, Caffeine, Acetamide, Benzalkonium Chloride.

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