FITTING A MODEL WITH INTERACTIONS

By fitting a model for MFI and using all the continuous predictors and all possible two-way interactions for this continuous predictor, the model has six mean effects and 15 two-way interaction terms.

From the model, it can be realized that the interaction between SA and Ambient Temp is most significant with a P value of 0.00286.

It can also be realized from the profiler that the slope of pH as you change the value of SA from the low level to high level. The slope of the line for pH changes. At low values of SA the slope of the line for pH is negative, which indicates that as pH increases their response, MFI, decreases. However, at high values of essay, the slope of the line for PHS positive, which indicates that has pH changes, MFI increases.

The slope of each line indicates how the response changes as you change the value of the given predictor. When there is a significant two-way interaction, the effects of 1 predictor on their response depend on the value of the other predictors.

It can be realized that we can fit the model properly by removing all the insignificant interactions in mean effects from the effect summary. It is important to notice that we remove the interactions with higher P values first before we moved to the lower ones.