

## Surface Tension of Silanes: a Correlation and an Artificial Neural Network

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This work presents a new equation to calculate the surface tension of silanes. As a first step, a detailed statistical analysis of the data available on the surface tension of silanes was made; also, a factor analysis approach was adopted in order to identify the most significant parameters that influence the surface tension of these compounds. The data were then regressed with the most reliable semi-empirical correlation methods in literature based on the corresponding states theory. The proposed equation is very simple and gives noticeable improvement with respect to similar existing correlations. The same physical parameters considered in the proposed equation were also adopted as input parameters in a multi-layer perceptron neural network, to predict the surface tension of silanes. The multi-layer perceptron proposed has one hidden layer, determined according to the constructive approach. The model developed was trained, validated, and tested for the set of data collected, showing that the accuracy of the neural network model is higher than that of the methods proposed in literature.