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## Misuse of pre-exponential factor in the kinetic and thermodynamic studies using thermogravimetric analysis and its implications

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### **Abstract**

This paper describes the misuse of Arrhenius pre-exponential factor in the kinetic and thermodynamic studies using thermogravimetry. Standard test method (ASTM E698) has been used recently by many researchers to calculate the pre-exponential factor. ASTM E698 is reserved for differential scanning calorimetry (DSC) and impose many restrictions which have being overlooked by many recently. The obtained pre-exponential factors have been used to describe the thermodynamic behavior during the course of thermal conversions. The objective of this paper is to inform the readers that the pre-exponential factor obtained from the restricted equation can mislead and generate some false thermodynamic data.

### **Theoretical Background**

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