($t_A$) = retention time of species A.

($t_B$)= retention time of species B.

$W_A$= peak width of species A.

$W_B$= peak width of species B.

Rs of > 2 is desirable between the peak of interest and the closest potential interfering peak (impurity, excipient, degradation product, and internal standard.

*1.8.12. Theoretical plates*

Theoretical plates in many separation processes are hypothetical zone or stage in which two phases, such as the liquid and vapor phases of a substance, establish an equilibrium with each other. Such equilibrium stages may also be referred to as an equilibrium stage or a theoretical try. The performance of many separation processed depend on having a series of equilibrium stage and is enhanced by providing more such stages. In other words, having more theoretical plates increases the efficiency of the separation process.

The number of theoretical plates (N) can be calculated by the below equation:

$$\left[ N = 5545.\left( \frac{t_r}{w_h} \right)^2 \right]$$

The theoretical plate number depends on elution time but in general should be > 2000.

*1.8.13. Symmetry (tailing factor)*

The tailing factor is a measure of peak tailing. It is defined as the distance from the front slope of the peak to the back slop divided by twice the distance from the center line of the peak to the front slope (John W., 2003). If its value increases (T of ≥2) as tailing become more pronounced and it is computed by the formula:

A.s = b/a