

flow rate

in chromatography

The volume of mobile phase passing through the column in unit time. The flow rate is usually measured at column outlet, at ambient pressure (p_a) and temperature (T_a , in K); this value is indicated with the symbol F . If a water-containing flowmeter was used for the measurement (e.g. the so-called soap bubble flowmeter) then F must be corrected to dry gas conditions in order to obtain the mobile phase flow rate at ambient temperature (F_a):

$$F_a = F \left(1 - \frac{p_w}{p_a}\right)$$

where p_w is the partial pressure of water vapour at ambient temperature. In order to specify chromatographic conditions in column chromatography, the flow-rate (mobile phase flow rate at column temperature, F_c) must be expressed at T_c (kelvin), the column temperature:

$$F_c = F_a \frac{T_c}{T_a}$$

Source:

PAC, 1993, 65, 819 (*Nomenclature for chromatography (IUPAC Recommendations 1993)*) on page 839