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local fraction desolvated, χ_s, β_s

in flame emission and absorption spectrometry

The amount-of-substance fraction of component in a desolvated state in the amount of component entering the flame. This quantity is measured in a defined part of the flame, usually the observation space. Because it varies with height in the flame as a result of progressive evaporation of aerosol droplets, it is appropriate to term the expression local. The fraction desolvated does not account for losses by incomplete volatilization of the dry aerosol (which largely depends upon the nature and concentration of the component). Such losses are described by local fraction volatilized, which usually depends on the solute. Since χ_s varies markedly with the height in the flame, its observed value represents an average. Local fraction desolvated depends on the solvent, the temperature of the flame and the time the component takes to travel from the tip of the burner to the height in the flame considered.

Source:

PAC, 1986, *58*, 1737 *(Quantities and units in clinical chemistry: Nebulizer and flame properties in flame emission and absorption spectrometry (Recommendations 1986))* on page 1740

Orange Book, p. 168

