

Relative density of urine

By *relative density of urine* we mean the ratio of the density of urine to the density of water. The density of water is practically equal to 1 kg/l, so the difference between the density of water (in kg/l) and the relative density of urine is negligible. In the SI system, density has the dimension $\text{kg}\cdot\text{m}^{-3}$. The density of the sample in relation to the density of water is a relative quantity and is therefore given by a dimensionless number.

Determination of density of urine

The density of urine is estimated indirectly by the concentration of cations using diagnostic strips. The indicator zone of the strip contains a suitable polyelectrolyte as an ion exchanger and the acid-base indicator bromothymol blue. The principle of diagnostic strips is based on the exchange of cations from urine, especially Na^+ , K^+ , NH_4^+ , for the H^+ ions of the polyelectrolyte in the indication zone. The released H^+ acidifies the weakly buffered acid-base indicator, which is in alkaline form. Acidification is accompanied by a change in color to bromothymol blue. The disadvantage is that examination with diagnostic strips does not take into account substances of a non-electrolyte nature such as glucose, proteins, urea, creatinine and some others.

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