What is *m/z* accuracy?

Mass accuracy, more precisely *m/z* accuracy, corresponds to the difference between the calculated (theoretical) *m/z* value and the measured *m/z* value of an ion. Therefore, *m/z* accuracy shows how accurate *m/z* data a mass analyser can give [1].

Mass accuracy is often expressed as parts per million (ppm) and can be calculated using the following equation:

$$\Delta = \frac{m/z \ (measured) - m/z(calculated)}{m/z(calculated)} * 10^6,$$

where Δ is the *m/z* error in parts per million (ppm).[1]

Mass accuracy is closely related to the resolution. High *m/z* accuracy cannot be obtained with an instrument that has low resolution because, in that case, the maxima of signals are wide and finding the exact location of the maximum on the *m/z* axis is difficult.[1]

References:

1. de Hoffmann, E.; Stroobant, V. *Mass Spectrometry: Principles and Applications*, 3rd ed.; John Wiley & Sons, Ltd.: Chichester, UK, 2007.