In mass spectroscopy, the mass-to-charge ratio (symbols: \( m/z \), \( m/e \)) of a cation is equal to the mass of the cation divided by its charge.

\[
\text{mass-to-charge ratio} = \frac{\text{mass of cation}}{\text{charge of cation}}
\]

Since the charge of cation formed in the mass spectrometer is almost always +1, the mass-to-charge ratio of a cation is usually equal to the mass of the cation.

\[
\text{mass-to-charge ratio} = \frac{\text{mass of cation}}{+1}
\]

\[
= \text{mass of cation}
\]

The mass of the molecular ion is equal to the molecular weight of the compound. Thus, the mass-to-charge ratio of the molecular ion is equal to the molecular weight of the compound.

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**Contributors**

- Gamini Gunawardena from the OChemPal site *(Utah Valley University)*