charge-transfer reaction

in mass spectrometry

An ion/neutral species reaction wherein the total charge on the reactant ion is transferred initially to the reactant neutral species so that the reactant ion becomes a neutral entity. Considering some of the possible reactions of ions M^{2+} , M^{+} and M^{-} with a neutral species X, these would be further categorized as follows:

$$M^{2^{+}} + X \longrightarrow M^{+} + X^{+}$$

(Partial charge transfer)

 $M^{+} + X \longrightarrow M^{2^{+}} + X + e^{-}$

(Charge stripping)

 $M^{-} + X \longrightarrow M^{+} + X + 2e^{-}$

(Charge stripping and charge inversion)

All are ion/neutral species reactions and also charge permutation reactions.

Source:

PAC, 1991, 63, 1541 (Recommendations for nomenclature and symbolism for mass spectroscopy (including an appendix of terms used in vacuum technology). (Recommendations 1991)) on page 1555