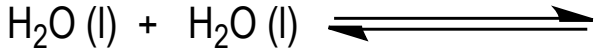
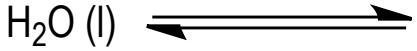
CONCEPT: AUTO-IONIZATION

Water can react with itself in a reaction called ***self–ionization*** where _____ and _____ are produced.

- Water is **Amphoteric:** can donate or accept a proton.



This reaction is usually written more simply as:



The equilibrium equation for water is called the _____ (K_W) for water and is given by the following:

$$K_W = [H^+][OH^-]$$

At 25°C, K_W = _____, but remember K_W, like all other constants K, is temperature dependent.

- Increasing the temperature will _____ K_W.

Constant	0 °C	10 °C	50 °C	100 °C
K_W	1.14×10^{-14}	2.93×10^{-14}	5.476×10^{-14}	5.13×10^{-13}

EXAMPLE: Determine the concentration of hydronium ions for a neutral solution at 25°C and at 50°C.