Polyphosphoric acids are of the greatest practical importance. Of the polyphosphoric acids, the most fully studied is *diphosphoric* (*pyrophosphoric*) *acid* $H_4P_2O_7$, isolated in crystalline form in two forms with melting temperatures of 54.3°C and 71.5°C. Pyrophosphoric acid is tetrabasic, dissociation constants at 18 °C are: $K_1 = 1.4 \cdot 10^{-1}$, $K_2 = 1.1 \cdot 10^{-2}$, $K_3 = 2.1 \cdot 10^{-7}$, $K_4 = 4.1 \cdot 10^{-10}$.

Tri-and *tetrapolyphosphoric acids* are isolated as dilute solutions. The existence of more condensed phosphoric acids containing up to 12 atoms in the chain is proved by paper chromatography. Polyphosphoric acids are polyelectrolytes.

Cyclic metaphosphoric acids (e.g. $H_3P_3O_9$, $H_4P_4O_{12}$) are strong acids.

Ultraphosphoric acids are little studied.