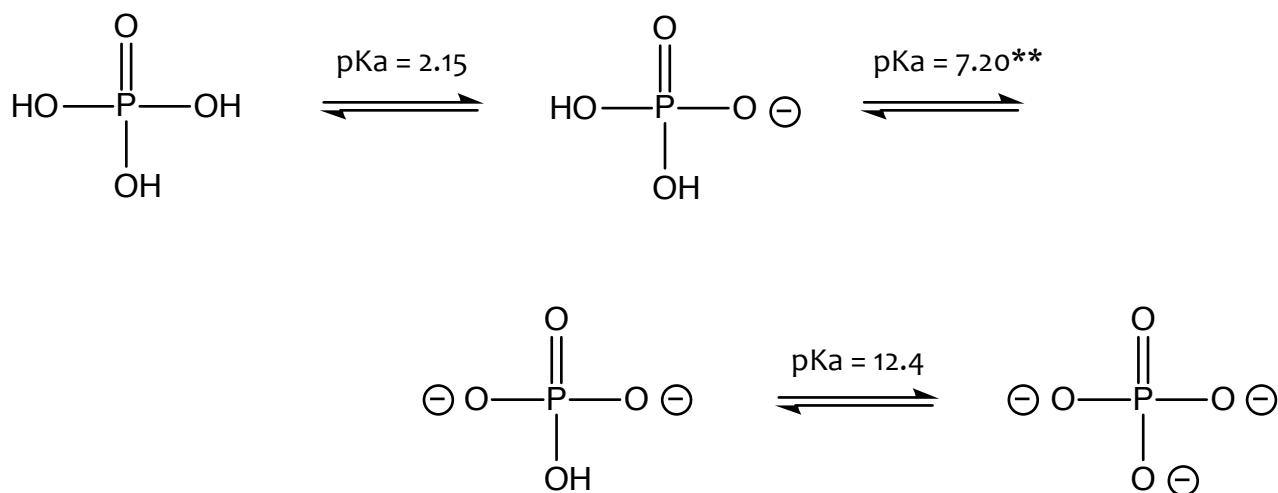


A Natural History of Phosphate Species

In solution	As found in "bottles"
H_3PO_4 phosphoric acid	H_3PO_4 phosphoric acid (as a concentrated sol'n in water)
$\text{H}_2\text{PO}_4^{1-}$ dihydrogen phosphate ion	NaH_2PO_4 sodium dihydrogen phosphate, or sodium phosphate monobasic*
HPO_4^{2-} hydrogen phosphate ion	Na_2HPO_4 disodium hydrogen phosphate, or sodium phosphate dibasic*
PO_4^{3-} phosphate ion	Na_3PO_4 trisodium phosphate (TSP), or sodium phosphate tribasic*

(of course, other counterions like K^+ are possible)



N.B. – a "phosphate" buffer could be composed of any of these species.
The relevant ones depend upon the pH & the pKa. You use the
Henderson-Hasselbalch equation to figure this out.

* the "monobasic" nomenclature means it can absorb one proton etc.

** 7.20 is the value in pure water. Under physiological conditions, the pKa is 6.86.

See Jungas, *Analytical Biochemistry* vol 349 pgs 1-15 (2005).