

Ca(OH)_2 is a strong base which dissociates fully in water: Ca(OH)_2 to Ca^{2+} and 2OH^- . BUT Ca(OH)_2 is also a sparingly soluble salt which dissociates only partially, and has K_{sp} of about order of 10^{-6} . Why are so? When discuss about acid-base, it dissociates fully but when talk about salt, it dissociates partially. Why?

Everything is right EXCEPT:

... Ca(OH)_2 is also a sparingly soluble(!!!) salt which ~~dissociates~~ dissolves only partially...

The solid may dissolve unchanged, with dissociation or with chemical reaction with another constituent of the solvent, such as acid or alkali.

For example, sucrose (common sugar) dissolves fully in water but it doesn't dissociate at all!

Dissociation and dissolution are not the same process. So Ca(OH)_2 dissolves sparingly, but dissociates fully. In other words: far not all the molecules of Ca(OH)_2 get to the solution from solid, but all that did it – dissociate.

Although calcium hydroxide is only slightly soluble, all of the compound which dissolves is completely ionized.