Solubility Rules Table

The solubility classification of ionic substances according to their solubility in water is difficult. Nothing is completely "insoluble" in water. The degree of solubility varies from one "soluble" substance to another. Nevertheless, a solubility classification scheme is useful even though it must be regarded as an approximate guideline.

MAINLY WATER SOLUBLE	
NO_3^-	All nitrates are soluble.
CH_3COO^- or $C_2H_3O_2^-$	All acetates are soluble except $AgCH_3COO$*.
ClO_3^-	All chlorates are soluble.
Cl^-	All chlorides are soluble except AgCl, Hg_2Cl_2 $PbCl_2$*.
Br^-	All bromides are soluble except AgBr, $PbBr_2$*, Hg_2Br_2 and $HgBr_2$*.
I^-	All iodides are soluble except AgI, Hg_2I_2, HgI_2 and PbI_2.
SO_4^{2-}	All sulfates are soluble except $BaSO_4$, $PbSO_4$, Hg_2SO_4, $CaSO_4$, Ag_2SO_4* and $SrSO_4$*.
Alkali metal cations (Group IA) and NH_4^+	All are soluble.
H^+	All common inorganic acids and low molecular mass organic acids are soluble.

MAINLY WATER INSOLUBLE	
CO_3^{2-}	All carbonates are insoluble except those of the IA elements and NH_4^+.
CrO_4^{2-}	All chromates are insoluble except those of of the IA elements, NH_4^+, $CaCrO_4$* and $SrCrO_4$*.
OH^-	All hydroxides are insoluble except those of the IA elements, NH_4^+, $Ba(OH)_2$, $Sr(OH)_2$*, and $Ca(OH)_2$*.
PO_4^{3-}	All phosphates are insoluble except those of the IA elements and NH_4^+.
SO_3^{2-}	All sulfites are insoluble except those of the IA elements and NH_4^+.
S^{2-}	All sulfides are insoluble except those of the IA and IIA elements and NH_4^+.

Soluble compounds dissolve to the extent of at least 10 g/L at 25 °C. *Slightly soluble* compounds (marked with an *) dissolve in the range of from 1 g/L to 10 g/L at 25 °C. Those compounds that have a solubility of less than 1 g/L are considered to be *insoluble*. These standards are common but arbitrary.