

## Solubility of Common Compounds in Water

### Common compounds that contain the following ions are SOLUBLE:

<b>a</b>	sodium, potassium, and ammonium	$\text{Na}^+$ , $\text{K}^+$ , and $\text{NH}_4^+$
<b>b</b>	nitrates	$\text{NO}_3$
<b>c</b>	acetates, except silver acetate, which is only moderately soluble	$\text{C}_2\text{H}_3\text{O}_2$
<b>d</b>	chlorides, except silver, mercury (I), and lead chlorides $\text{PbCl}_2$ is soluble in hot water	$\text{Cl}^-$
<b>e</b>	sulfates, except barium and lead sulfates Calcium, mercury (I), and silver sulfates are slightly soluble.	$\text{SO}_4^{2-}$

### Common compounds that contain the following ions are INSOLUBLE:

<b>f</b>	silver, except silver nitrate and silver perchlorate	$\text{Ag}^+$
<b>g</b>	sulfides, except those of sodium, potassium, ammonium, magnesium, barium, and calcium	$\text{S}^{2-}$
<b>h</b>	carbonates, except those of sodium, potassium, and ammonium	$\text{CO}_3^{2-}$
<b>i</b>	phosphates, except those of sodium, potassium, and ammonium $\text{PbCl}_2$ is soluble in hot water.	$\text{PO}_4^{3-}$
<b>j</b>	hydroxides, except those of sodium, potassium, ammonium, and barium	$\text{OH}^-$

## SOLUBILITY CHART

	acetate	bromide	carbonate	chlorate	chloride	chromate	hydroxide	iodide	nitrate	oxide	phosphate	silicate	sulfate	sulfide
aluminum	S	S	-	S	S	-	A	S	S	a	A	I	S	d
ammonium	S	S	S	S	S	S	-	S	S	-	S	-	S	S
barium	S	S	P	S	S	A	S	S	S	S	A	S	a	d
calcium	S	S	P	S	S	S	P	S	S	P	P	P	P	P
copper (II)	S	S	-	S	S	-	A	-	-	A	A	A	S	A
hydrogen	S	S	-	S	S	-	-	S	S	-	S	I	S	S
iron (II)	S	S	P	S	S	-	A	S	S	A	A	-	S	A
iron (III)	S	S	-	S	S	A	A	S	S	A	P	-	P	d
lead (II)	S	S	A	S	P	A	P	P	S	P	A	A	P	A
magnesium	S	S	P	S	S	S	A	S	S	A	P	A	S	d
manganese (II)	S	S	P	S	S	-	A	S	S	A	P	I	S	A
mercury (I)	P	A	A	S	a	P	-	A	S	A	A	-	P	I
mercury (II)	S	S	-	S	S	P	A	P	S	P	A	-	d	I
potassium	S	S	S	S	S	S	S	S	S	S	S	S	S	S
silver	P	a	A	S	a	P	-	I	S	P	A	-	P	A
sodium	S	S	S	S	S	S	S	S	S	S	S	S	S	S
strontium	S	S	P	S	S	P	S	S	S	S	A	A	P	S
tin (II)	d	S	-	S	S	A	A	S	d	A	A	-	S	A
tin (IV)	S	S	-	-	-	S	P	d	-	A	-	-	S	A
zinc	S	S	P	S	S	P	A	S	S	P	A	A	S	A

S = soluble in water

P = partially soluble in water, soluble in dilute acids

A = soluble in acids, insoluble in water

a = slightly soluble in acids, insoluble in water

I = insoluble in dilute acids and in water

d = decomposes in water