

## Answer on the question #62836, Chemistry / General Chemistry

### Question:

what precipitate forms when aqueous solutions of calcium bromide and potassium phosphate are mixed? What is the work shown to figure this out?

### Answer:

According to the solubility table, calcium phosphate  $\text{Ca}_3(\text{PO}_4)_2$  is insoluble.

**Solubility Table  
Common Ionic Compounds**

	Group 1				Group 2			Transition Metals					
	$\text{NH}_4^+$	$\text{Li}^+$	$\text{Na}^+$	$\text{K}^+$	$\text{Mg}^{2+}$	$\text{Ca}^{2+}$	$\text{Ba}^{2+}$	$\text{Al}^{3+}$	$\text{Fe}^{3+}$	$\text{Cu}^{2+}$	$\text{Ag}^+$	$\text{Zn}^{2+}$	$\text{Pb}^{2+}$
$\text{F}^-$	sol	sol	sol	sol	insol	insol	sl sol	sol	sl sol	sol	sol	sol	insol
$\text{Cl}^-$	sol	sol	sol	sol	sol	sol	sol	sol	sol	sol	insol	sol	sol
$\text{Br}^-$	sol	sol	sol	sol	sol	sol	sol	sol	sol	sol	insol	sol	sl sol
$\text{I}^-$	sol	sol	sol	sol	sol	sol	sol	sol			insol	sol	insol
$\text{OH}^-$	sol	sol	sol	sol	insol	sl sol	sol	insol	insol	insol		insol	insol
$\text{S}^{2-}$	sol	sol	sol	sol					insol	insol	insol	insol	insol
$\text{SO}_4^{2-}$	sol	sol	sol	sol	sol	sl sol	insol	sol	sol	sol	sl sol	sol	insol
$\text{CO}_3^{2-}$	sol	sol	sol	sol	insol	insol	insol				insol	insol	insol
$\text{NO}_3^-$	sol	sol	sol	sol	sol	sol	sol	sol	sol	sol	sol	sol	sol
$\text{PO}_4^{3-}$	sol	insol	sol	sol	insol	insol	insol	insol	insol	insol	insol	insol	insol
$\text{CrO}_4^{2-}$	sol	sol	sol	sol	sol	sol	insol		insol	insol	insol	insol	insol
$\text{CH}_3\text{CO}_2^-$	sol	sol	sol	sol	sol	sol	sol	sl sol	sol	sol	sol	sol	sol

sol — soluble  
sl sol — slightly soluble

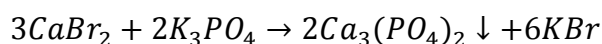
insol — insoluble  
(blank) — compound does not exist



<http://www.flinnsci.com/store/catalogPhotos/AP6901cat.jpg>

Thus, the precipitate formed when two solutions are mixed is calcium phosphate  $\text{Ca}_3(\text{PO}_4)_2$ .

The equation of chemical reaction between calcium bromide and potassium phosphate is needed to figure this out:



In its turn, potassium bromide is soluble.

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