

## **AP Chemistry Summer Preparation 2026**

There is no formal summer assignment in AP chemistry (nothing graded).

That being said, it would help you out a lot next year if you learned your solubility rules and polyatomic ions over the summer.

For the polyatomic ions, you should know the name, charge, and formula.

If you would like to brush up on your chemistry, please use the link below to review topics, particularly Module 1: Essentials.

<https://courses.lumenlearning.com/chemistryformajors/>

Have a great summer!

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<b>Ion</b>	<b>Solubility</b>	<b>Exceptions</b>
$\text{NO}_3^-$	soluble	none
$\text{ClO}_4^-$	soluble	none
$\text{Cl}^-$	soluble	except $\text{Ag}^+$ , $\text{Hg}_2^{2+}$ , $^*\text{Pb}^{2+}$
$\text{I}^-$	soluble	except $\text{Ag}^+$ , $\text{Hg}_2^{2+}$ , $^*\text{Pb}^{2+}$
$\text{SO}_4^{2-}$	soluble	except $\text{Ca}^{2+}$ , $\text{Ba}^{2+}$ , $\text{Sr}^{2+}$ , $\text{Hg}^{2+}$ , $\text{Pb}^{2+}$ , $\text{Ag}^+$
$\text{CO}_3^{2-}$	insoluble	except Group IA and $\text{NH}_4^+$
$\text{PO}_4^{3-}$	insoluble	except Group IA and $\text{NH}_4^+$
$\text{OH}^-$	insoluble	except Group IA, $^*\text{Ca}^{2+}$ , $\text{Ba}^{2+}$ , $\text{Sr}^{2+}$
$\text{S}^{2-}$	insoluble	except Group IA, IIA and $\text{NH}_4^+$
$\text{Na}^+$	soluble	none
$\text{K}^+$	soluble	none
$\text{NH}_4^+$	soluble	none

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<b>+1 IONS</b>		<b>+2 IONS</b>		<b>+3 IONS</b>	
AMMONIUM	NH <sub>4</sub> <sup>+1</sup>	BARIUM	Ba <sup>+2</sup>	ALUMINUM	Al <sup>+3</sup>
CESIUM	Cs <sup>+1</sup>	BERYLLIUM	Be <sup>+2</sup>	CHROMIUM(III)	Cr <sup>+3</sup>
COPPER (I)	Cu <sup>+1</sup>	COBALT(II)	Co <sup>+2</sup>	COBALT(III)	Co <sup>+3</sup>
HYDROGEN	H <sup>+1</sup>	CALCIUM	Ca <sup>+2</sup>	GALLIUM	Ga <sup>+3</sup>
LITHIUM	Li <sup>+1</sup>	CHROMIUM(II)	Cr <sup>+2</sup>	IRON(III)	Fe <sup>+3</sup>
POTASSIUM	K <sup>+1</sup>	COPPER(II)	Cu <sup>+2</sup>	MANGANESE(III)	Mn <sup>+3</sup>
RUBIDIUM	Rb <sup>+1</sup>	IRON(II)	Fe <sup>+2</sup>		
SILVER	Ag <sup>+1</sup>	LEAD(II)	Pb <sup>+2</sup>	<b>+4 IONS</b>	
SODIUM	Na <sup>+1</sup>	MAGNESIUM	Mg <sup>+2</sup>	TIN(IV)	Sn <sup>+4</sup>
		MANGANESE(II)	Mn <sup>+2</sup>	LEAD(IV)	Pb <sup>+4</sup>
		MERCURY(I)	(Hg <sub>2</sub> ) <sup>+2</sup>		
		MERCURY(II)	Hg <sup>+2</sup>		
		NICKEL	Ni <sup>+2</sup>		
		STRONTIUM	Sr <sup>+2</sup>		
		TIN(II)	Sn <sup>+2</sup>		
		ZINC	Zn <sup>+2</sup>		

<b>-1 IONS</b>		<b>-2 IONS</b>		<b>-3 IONS</b>	
ACETATE	C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> <sup>-1</sup>	CARBONATE	CO <sub>3</sub> <sup>-2</sup>	ARSENATE	AsO <sub>4</sub> <sup>-3</sup>
BROMATE	BrO <sub>3</sub> <sup>-1</sup>	CHROMATE	CrO <sub>4</sub> <sup>-2</sup>	NITRIDE	N <sup>-3</sup>
BROMIDE	Br <sup>-1</sup>	DICHROMATE	Cr <sub>2</sub> O <sub>7</sub> <sup>-2</sup>	PHOSPHATE	PO <sub>4</sub> <sup>-3</sup>
CHLORATE	ClO <sub>3</sub> <sup>-1</sup>	MONOHYDROGEN PHOSPHATE	HPO <sub>4</sub> <sup>-2</sup>	PHOSPHIDE	P <sup>-3</sup>
CHLORIDE	Cl <sup>-1</sup>	OXALATE	C <sub>2</sub> O <sub>4</sub> <sup>-2</sup>		
CHLORITE	ClO <sub>2</sub> <sup>-1</sup>	OXIDE	O <sup>-2</sup>		
CYANIDE	CN <sup>-1</sup>	PEROXIDE	O <sub>2</sub> <sup>-2</sup>		
DIHYDROGEN PHOSPHATE	H <sub>2</sub> PO <sub>4</sub> <sup>-1</sup>	SULFATE	SO <sub>4</sub> <sup>-2</sup>		
FLUORIDE	F <sup>-1</sup>	SULFIDE	S <sup>-2</sup>		
HYDRIDE	H <sup>-1</sup>	SULFITE	SO <sub>3</sub> <sup>-2</sup>		
HYDROGEN SULFATE	HSO <sub>4</sub> <sup>-1</sup>				
HYDROGEN CARBONATE	HCO <sub>3</sub> <sup>-1</sup>				
HYDROGEN SULFITE	HSO <sub>3</sub> <sup>-1</sup>				
HYDROXIDE	OH <sup>-1</sup>				
HYPOCHLORITE	ClO <sup>-1</sup>				
IODATE	IO <sub>3</sub> <sup>-1</sup>				
IODIDE	I <sup>-1</sup>				
NITRATE	NO <sub>3</sub> <sup>-1</sup>				
NITRITE	NO <sub>2</sub> <sup>-1</sup>				
PERCHLORATE	ClO <sub>4</sub> <sup>-1</sup>				
PERMANGANATE	MnO <sub>4</sub> <sup>-1</sup>				