

Polyatomic Ions and Solubility Reference Chart

Charges of Common Polyatomic Ions		
<p style="text-align: center;"><u>1+</u></p> <p>ammonium, NH_4^+</p>		<p style="text-align: center;"><u>2+</u></p> <p>mercury I, Hg_2^{2+} mercury II, Hg^{2+}</p>
<p style="text-align: center;"><u>1-</u></p> <p>acetate, CH_3COO^- bicarbonate, HCO_3^- bisulfate, HSO_4^- bisulfite, HSO_3^- chlorate, ClO_3^- chlorite, ClO_2^- cyanide, CN^- hydroxide, OH^- hypochlorite, ClO^- iodate, IO_3^- nitrate, NO_3^- nitrite, NO_2^- perchlorate, ClO_4^- permanganate, MnO_4^-</p>	<p style="text-align: center;"><u>2-</u></p> <p>carbonate, CO_3^{2-} chromate, CrO_4^{2-} dichromate, $\text{Cr}_2\text{O}_7^{2-}$ oxalate, $\text{C}_2\text{O}_4^{2-}$ peroxide, O_2^{2-} silicate, SiO_3^{2-} sulfate, SO_4^{2-} sulfite, SO_3^{2-} tartrate, $\text{C}_4\text{H}_4\text{O}_6^{2-}$ tetraborate, $\text{B}_4\text{O}_7^{2-}$ thiosulfate, $\text{S}_2\text{O}_3^{2-}$</p>	<p style="text-align: center;"><u>3-</u></p> <p>phosphate, PO_4^{3-}</p>

Solubilities in Water

S = soluble; P = slightly soluble; I = insoluble; D = decomposes in water; — = does not exist or unstable

	Acetate, CH ₃ COO ⁻	Bromide, Br	Carbonate, CO ₃ ²⁻	Chlorate, ClO ₃ ⁻	Chloride, Cl ⁻	Chromate, CrO ₄ ²⁻	Hydroxide, OH ⁻	Iodide, I ⁻	Nitrate, NO ₃ ⁻	Oxide, O ²⁻	Oxalate, C ₂ O ₄ ²⁻	Phosphate, PO ₄ ³⁻	Silicate, SiO ₃ ²⁻	Sulfate, SO ₄ ²⁻	Sulfide, S ²⁻	Sulfite, SO ₃ ²⁻
Aluminum, Al ³⁺	S	S	—	S	S	—	I	S	S	I	I	I	I	S	D	—
Ammonium, NH ₄ ⁺	S	S	S	S	S	S	S	S	S	—	P	S	—	S	S	S
Antimony, Sb ³⁺	—	D	—	—	S	—	—	D	—	P	I	—	—	D	D	—
Arsenic, As ³⁺	—	D	—	—	D	—	—	S	—	P	—	—	—	—	I	—
Barium, Ba ²⁺	S	S	I	S	S	I	S	S	S	S	I	I	—	I	D	I
Bismuth, Bi ³⁺	I	D	—	—	D	—	I	I	D	I	D	I	I	D	I	—
Cadmium, Cd ²⁺	S	S	I	S	S	I	I	S	S	I	I	I	I	S	I	P
Calcium, Ca ²⁺	S	S	I	S	S	S	I	S	S	I	I	I	I	I	P	I
Chromium, Cr ³⁺	S	S	—	—	I	—	I	S	S	I	S	P	—	S	D	I
Cobalt, Co ²⁺	S	S	I	S	S	I	I	S	S	I	I	I	I	S	I	I
Copper, Cu ²⁺	S	S	I	S	S	—	I	I	S	I	I	I	—	S	I	—
Iron III, Fe ³⁺	S	S	—	S	S	I	I	S	S	I	S	P	—	S	D	—
Iron II, Fe ²⁺	S	S	P	S	S	—	I	S	S	I	I	I	I	S	I	I
Lead, Pb ²⁺	S	S	I	S	S	I	I	I	S	I	I	I	I	I	I	I
Magnesium, Mg ²⁺	S	S	P	S	S	S	I	S	S	I	I	I	I	S	D	S
Mercury II, Hg ²⁺	S	S	—	S	S	P	—	I	S	I	I	—	—	D	I	—
Mercury I, Hg ₂ ²⁺	P	I	I	S	I	P	—	P	D	I	I	—	—	I	I	—
Nickel, Ni ²⁺	S	S	I	S	S	I	I	S	S	I	I	I	—	S	I	I
Potassium, K ⁺	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Silver, Ag ⁺	P	I	I	S	I	I	—	I	S	I	I	I	—	I	I	I
Sodium, Na ⁺	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Strontium, Sr ²⁺	S	S	I	S	S	I	I	S	S	I	I	I	I	I	I	I
Zinc, Zn ²⁺	S	S	I	S	S	I	I	S	S	I	I	I	I	S	I	I