

The solubility in water of compounds formed between cations and anions:

	CO <sub>3</sub> <sup>2-</sup>	SO <sub>4</sub> <sup>2-</sup>	Cl <sup>-</sup>	Br <sup>-</sup>	I <sup>-</sup>	OH <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	
Li <sup>+</sup>	slightly soluble	soluble	soluble	soluble	soluble	slightly soluble	soluble	Li <sup>+</sup>
Na <sup>+</sup>	soluble	soluble	soluble	soluble	soluble	soluble	soluble	Na <sup>+</sup>
K <sup>+</sup>	soluble	soluble	soluble	soluble	soluble	soluble	soluble	K <sup>+</sup>
Mg <sup>2+</sup>	insoluble	soluble	soluble	soluble	soluble	slightly soluble	soluble	Mg <sup>2+</sup>
Ca <sup>2+</sup>	insoluble	slightly soluble	soluble	soluble	soluble	slightly soluble	soluble	Ca <sup>2+</sup>
Ba <sup>2+</sup>	insoluble	insoluble	soluble	soluble	soluble	slightly soluble	soluble	Ba <sup>2+</sup>
Cu <sup>2+</sup>		soluble	soluble	soluble	soluble	insoluble	soluble	Cu <sup>2+</sup>
Fe <sup>2+</sup>	insoluble	soluble	soluble	soluble	soluble	insoluble	soluble	Fe <sup>2+</sup>
Fe <sup>3+</sup>		soluble	soluble	soluble	soluble	insoluble	soluble	Fe <sup>3+</sup>
Ag <sup>+</sup>	insoluble	insoluble	insoluble	insoluble	insoluble		soluble	Ag <sup>+</sup>
Pb <sup>2+</sup>	insoluble	insoluble	insoluble	soluble	insoluble	insoluble	soluble	Pb <sup>2+</sup>
Zn <sup>2+</sup>	insoluble	soluble	soluble	soluble	soluble	insoluble	soluble	Zn <sup>2+</sup>
Al <sup>3+</sup>		soluble	soluble	soluble	soluble	insoluble	soluble	Al <sup>3+</sup>
NH <sub>4</sub> <sup>+</sup>	soluble	soluble	soluble	soluble	soluble	soluble	soluble	NH <sub>4</sub> <sup>+</sup>
	CO <sub>3</sub> <sup>2-</sup>	SO <sub>4</sub> <sup>2-</sup>	Cl <sup>-</sup>	Br <sup>-</sup>	I <sup>-</sup>	OH <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	



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## Tests for gases

Gas	Tests	Observations
<b>Carbon dioxide</b>	Limewater (calcium hydroxide solution)	A white precipitate forms which turns the limewater cloudy white
<b>Hydrogen</b>	A lighted wooden splint	Gas burns with a popping sound
<b>Oxygen</b>	A glowing wooden splint	Splint relights
<b>Ammonia</b>	Smell Damp red litmus paper Hydrogen chloride gas (from a drop of concentrated hydrochloric acid on a glass rod)	Pungent, choking smell. Paper turns blue A white smoke forms
<b>Chlorine</b>	Colour Smell Damp blue litmus paper Damp starch-iodide paper	Yellow green Bleach-like choking smell. Paper turns red, and then bleaches Paper turns blue-black
<b>Bromine</b>	Colour Damp blue litmus paper Damp starch-iodide paper	Orange-brown gas Paper turns red, and then slowly bleaches Paper turns blue-black
<b>Iodine</b>	Colour Damp starch-iodide paper	Violet coloured Paper turns blue-black
<b>Hydrogen halides (chloride, bromide and iodide)</b>	Smell Damp blue litmus paper Ammonia gas (from a drop of concentrated ammonia solution on a glass rod)	Pungent smell Paper turns red A thick white smoke is produced
<b>Water vapour</b>	Blue anhydrous cobalt(II) chloride paper	Paper turns pink



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