

gridlocks – can you unlock the grid?

Ionic Formulae 2

Before you answer the puzzles below fill in the table of formulae:

Anion	Calcium compound	Sodium compound	Aluminium compound	Potassium compound
chloride	CaCl_2		AlCl_3	
sulphate	CaSO_4		$\text{Al}_2(\text{SO}_4)_3$	
hydroxide			$\text{Al}(\text{OH})_3$	
nitrate				KNO_3
carbonate				K_2CO_3
phosphate		Na_3PO_4		K_3PO_4
oxide		Na_2O		K_2O
iodide				KI
sulphide	CaS			
hydrogen carbonate	$\text{Ca}(\text{HCO}_3)_2$		$\text{Al}(\text{HCO}_3)_3$	
bromide	CaBr_2		AlBr_3	

Gridlock 1

Each row, column and 2 x 2 box contains a carbonate, sulfate, hydroxide and nitrate. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

calcium compound		sodium compound	
CaSO_4			Na_2CO_3
			KNO_3
$\text{Al}(\text{OH})_3$			
aluminium compound		potassium compound	

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Puzzle 2

This puzzle uses chlorides, oxides, phosphates and iodides.

calcium compound		sodium compound	
CaCl ₂			NaI
	CaI ₂	NaCl	
	Al ₂ O ₃		
		K ₃ PO ₄	
aluminium compound		potassium compound	

Puzzle 3

This puzzle uses carbonates, sulphides, hydrogen carbonates and bromides.

calcium compound		sodium compound	
CaS			
		NaBr	
		K ₂ CO ₃	
	Al(HCO ₃) ₃		
aluminium compound		potassium compound	