

## Ionic formulas 2

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

anion	calcium compound	sodium compound	aluminium compound	potassium compound
chloride	CaCl <sub>2</sub>		AlCl <sub>3</sub>	
sulfate	CaSO <sub>4</sub>		Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	
hydroxide			Al(OH) <sub>3</sub>	
nitrate				KNO <sub>3</sub>
carbonate				K <sub>2</sub> CO <sub>3</sub>
phosphate		Na <sub>3</sub> PO <sub>4</sub>		K <sub>3</sub> PO <sub>4</sub>
oxide		Na <sub>2</sub> O		K <sub>2</sub> O
iodide				KI
sulfide	CaS			
hydrogen carbonate	Ca(HCO <sub>3</sub> ) <sub>2</sub>		Al(HCO <sub>3</sub> ) <sub>3</sub>	
bromide	CaBr <sub>2</sub>		AlBr <sub>3</sub>	

### 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 compounds		sodium compounds	
CaSO <sub>4</sub>			Na <sub>2</sub> CO <sub>3</sub>
			KNO <sub>3</sub>
Al(OH) <sub>3</sub>			
aluminium compounds		potassium compounds	

# gridlocks – can you unlock the grid?

## Puzzle 2

Each row, column and 2 x 2 box contains chlorides, oxides, phosphates and iodides.

calcium compound		sodium compounds	
CaCl <sub>2</sub>			NaI
	CaI <sub>2</sub>	NaCl	
	Al <sub>2</sub> O <sub>3</sub>		
		K <sub>3</sub> PO <sub>4</sub>	
aluminium compounds		potassium compounds	

## Puzzle 3

Each row, column and 2 x 2 box contains carbonates, sulphides, hydrogen carbonates and bromides.

calcium compounds		sodium compounds	
CaS			
		NaBr	
		K <sub>2</sub> CO <sub>3</sub>	
	Al(HCO <sub>3</sub> ) <sub>3</sub>		
aluminium compounds		potassium compounds	

## Ionic formulas 2 – answers

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

anion	calcium compound	sodium compound	aluminium compound	potassium compound
chloride	CaCl <sub>2</sub>	NaCl	AlCl <sub>3</sub>	KCl
sulfate	CaSO <sub>4</sub>	Na <sub>2</sub> SO <sub>4</sub>	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	K <sub>2</sub> SO <sub>4</sub>
hydroxide	Ca(OH) <sub>2</sub>	NaOH	Al(OH) <sub>3</sub>	KOH
nitrate	Ca(NO <sub>3</sub> ) <sub>2</sub>	NaNO <sub>3</sub>	Al(NO <sub>3</sub> ) <sub>3</sub>	KNO <sub>3</sub>
carbonate	CaCO <sub>3</sub>	Na <sub>2</sub> CO <sub>3</sub>	Al <sub>2</sub> (CO <sub>3</sub> ) <sub>3</sub>	K <sub>2</sub> CO <sub>3</sub>
phosphate	Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub>	Na <sub>3</sub> PO <sub>4</sub>	AlPO <sub>4</sub>	K <sub>3</sub> PO <sub>4</sub>
oxide	CaO	Na <sub>2</sub> O	Al <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O
iodide	CaI <sub>2</sub>	NaI	AlI <sub>3</sub>	KI
sulfide	CaS	Na <sub>2</sub> S	Al <sub>2</sub> S <sub>3</sub>	K <sub>2</sub> S
hydrogen carbonate	Ca(HCO <sub>3</sub> ) <sub>2</sub>	NaHCO <sub>3</sub>	Al(HCO <sub>3</sub> ) <sub>3</sub>	KHCO <sub>3</sub>
bromide	CaBr <sub>2</sub>	NaBr	AlBr <sub>3</sub>	KBr

### Puzzle 1 – answers

calcium compounds		sodium compounds	
CaSO <sub>4</sub>	Ca(OH) <sub>2</sub>	NaNO <sub>3</sub>	Na <sub>2</sub> CO <sub>3</sub>
Ca(NO <sub>3</sub> ) <sub>2</sub>	CaCO <sub>3</sub>	Na <sub>2</sub> SO <sub>4</sub>	NaOH
Al <sub>2</sub> (CO <sub>3</sub> ) <sub>3</sub>	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	KOH	KNO <sub>3</sub>
Al(OH) <sub>3</sub>	Al(NO <sub>3</sub> ) <sub>3</sub>	K <sub>2</sub> CO <sub>3</sub>	K <sub>2</sub> SO <sub>4</sub>
aluminium compounds		potassium compounds	

# gridlocks – can you unlock the grid?

## Puzzle 2 – answers

calcium compounds		sodium compounds	
$\text{CaCl}_2$	$\text{Ca}_3(\text{PO}_4)_2$	$\text{Na}_2\text{O}$	$\text{NaI}$
$\text{CaO}$	$\text{CaI}_2$	$\text{NaCl}$	$\text{Na}_3\text{PO}_4$
$\text{AlPO}_4$	$\text{Al}_2\text{O}_3$	$\text{KI}$	$\text{KCl}$
$\text{AlI}_3$	$\text{AlCl}_3$	$\text{K}_3\text{PO}_4$	$\text{K}_2\text{O}$
aluminium compounds		potassium compounds	

## Puzzle 3 – answers

calcium compounds		sodium compounds	
$\text{CaS}$	$\text{CaBr}_2$	$\text{NaHCO}_3$	$\text{Na}_2\text{CO}_3$
$\text{Ca}(\text{HCO}_3)_2$	$\text{CaCO}_3$	$\text{NaBr}$	$\text{Na}_2\text{S}$
$\text{AlBr}_3$	$\text{Al}_2\text{S}_3$	$\text{K}_2\text{CO}_3$	$\text{KHCO}_3$
$\text{Al}_2(\text{CO}_3)_3$	$\text{Al}(\text{HCO}_3)_3$	$\text{K}_2\text{S}$	$\text{KBr}$
aluminium compounds		potassium compounds	