

# gridlocks – can you unlock the grid?

## Some A-level reagents

Before you answer the gridlocks below fill in the table of formula of reagents that you might meet in A-level chemistry:

BaCl <sub>2</sub>	H <sub>2</sub> O <sub>2</sub>	KMnO <sub>4</sub>	NaHCO <sub>3</sub>	CH <sub>3</sub> COOH
name	formula	name	formula	formula
potassium manganate(VII)		ethanoic acid		
sodium dichromate(VI)	Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	silver nitrate		AgNO <sub>3</sub>
hydrogen peroxide		sodium thiosulfate		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
sodium ethanoate	CH <sub>3</sub> COO <sup>-</sup> Na <sup>+</sup>	ethanedioic acid		(COOH) <sub>2</sub>
barium chloride		potassium cyanide		KCN
phosphoric acid	H <sub>3</sub> PO <sub>4</sub>	sodium hydrogen carbonate		

### Gridlock 1

Each row, column and 2 x 2 box contains information about the first four reagents listed above. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

name		formula	
sodium dichromate (VI)			KMnO <sub>4</sub>
	H <sub>2</sub> O <sub>2</sub>		sodium ethanoate
	formula		name

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## Gridlock 2

Each row, column and 2 x 2 box contains information about each of the next four reagents in the table.

name		formula	
phosphoric acid			BaCl <sub>2</sub>
			silver nitrate
CH <sub>3</sub> COOH			
formula			name

## Gridlock 3

Each row, column and 2 x 2 box contains information about each of the last four reagents in the table

name		formula	
ethanedioic acid			
		NaHCO <sub>3</sub>	
		sodium thiosulfate	
	KCN		
formula			name

## Some A-level reagents

Before you answer the puzzles below fill in the table of formula of reagents that you might meet in A-level chemistry:

BaCl <sub>2</sub>		H <sub>2</sub> O <sub>2</sub>		KMnO <sub>4</sub>		NaHCO <sub>3</sub>		CH <sub>3</sub> COOH	
name		formula		name		formula			
potassium manganate(VII)		KMnO <sub>4</sub>		ethanoic acid		CH <sub>3</sub> COOH			
sodium dichromate(VI)		Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>		silver nitrate		AgNO <sub>3</sub>			
hydrogen peroxide		H <sub>2</sub> O <sub>2</sub>		sodium thiosulfate		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>			
sodium ethanoate		CH <sub>3</sub> COO <sup>-</sup> Na <sup>+</sup>		ethanedioic acid		(COOH) <sub>2</sub>			
barium chloride		BaCl <sub>2</sub>		potassium cyanide		KCN			
phosphoric acid		H <sub>3</sub> PO <sub>4</sub>		sodium hydrogen carbonate		NaHCO <sub>3</sub>			

### Puzzle 1 – answers

Each row, column and 2 x 2 box contains information about the first four reagents listed above. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

name		formula	
sodium dichromate(VI)	sodium ethanoate	H <sub>2</sub> O <sub>2</sub>	KMnO <sub>4</sub>
hydrogen peroxide	potassium manganate(VII)	CH <sub>3</sub> COO <sup>-</sup> Na <sup>+</sup>	Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>
KMnO <sub>4</sub>	H <sub>2</sub> O <sub>2</sub>	sodium dichromate(VI)	sodium ethanoate
CH <sub>3</sub> COO <sup>-</sup> Na <sup>+</sup>	Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	potassium manganate(VII)	hydrogen peroxide
formula		name	

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## Puzzle 2 – answers

Each row, column and 2 x 2 box contains information about each of the next four reagents in the table.

name		formula	
phosphoric acid	ethanoic acid	AgNO <sub>3</sub>	BaCl <sub>2</sub>
silver nitrate	barium chloride	H <sub>3</sub> PO <sub>4</sub>	CH <sub>3</sub> COOH
BaCl <sub>2</sub>	H <sub>3</sub> PO <sub>4</sub>	ethanoic acid	silver nitrate
CH <sub>3</sub> COOH	AgNO <sub>3</sub>	barium chloride	phosphoric acid
formula		name	

## Puzzle 3 – answers

Each row, column and 2 x 2 box contains information about each of the last four reagents in the table.

name		formula	
ethanedioic acid	sodium hydrogen carbonate	KCN	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
potassium cyanide	sodium thiosulfate	NaHCO <sub>3</sub>	(COOH) <sub>2</sub>
NaHCO <sub>3</sub>	(COOH) <sub>2</sub>	sodium thiosulfate	potassium cyanide
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	KCN	ethanedioic acid	sodium hydrogen carbonate
formula		name	