gridlocks – can you unlock the grid?

Halide ion tests

Before you answer the puzzle below fill in the table results of tests on aqueous halide ions.

halide ion	colour of ppt when $AgNO_3(aq)$ is added	when dil. ammonia added	when conc. (8M) ammonia is added
F^-	no ppt	no ppt	no ppt
Cl^-		white ppt dissolves	
Br^-	cream		cream ppt dissolves
I^-	pale yellow	pale yellow ppt does not dissolve	

Gridlock 1

Each row, column and 2 x 2 box contains information about each of the four halide ions. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

halide ion		colour of ppt when $AgNO_3(aq)$ is added	
Cl^-			no ppt
	cream		I^-

colour of ppt when $AgNO_3(aq)$ is added	halide ion

gridlocks – can you unlock the grid?

Gridlock 2

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

halide ion		colour of ppt when $AgNO_3(aq)$ is added	
F^-			pale yellow
	I^-	no ppt	
	cream ppt does not dissolve		
		white ppt dissolves	

when dil. ammonia added

when conc. (8M) ammonia is added

Gridlock 3

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

halide ion		colour of ppt when $AgNO_3(aq)$ is added	
Cl^-			
		pale yellow	
		no ppt	
	cream ppt does not dissolve		

when dil. ammonia added

when conc. (8M) ammonia is added

Halide ion tests – answers

Before you answer the puzzle below fill in the table results of tests on aqueous halide ions.

halide ion	colour of ppt when $AgNO_3(aq)$ is added	when dil. ammonia added	when conc. (8M) ammonia is added
F^-	no ppt	no ppt	no ppt
Cl^-	**white**	white ppt dissolves	**white ppt dissolves**
Br^-	cream	**cream ppt does not dissolve**	cream ppt dissolves
I^-	pale yellow	pale yellow ppt does not dissolve	**pale yellow ppt does not dissolve**

Puzzle 1 – answers

Each row, column and 2 x 2 box contains information about each of the four halide ions. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

halide ion		colour of ppt when $AgNO_3(aq)$ is added	
Cl^-	I^-	cream	no ppt
Br^-	F^-	pale yellow	white
no ppt	cream	Cl^-	I^-
pale yellow	white	F^-	Br^-
colour of ppt when $AgNO_3(aq)$ is added		halide ion	

gridlocks – can you unlock the grid?

Puzzle 2 – answers

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

halide ion		colour of ppt when $AgNO_3(aq)$ is added	
F^-	Cl^-	cream	pale yellow
Br^-	I^-	no ppt	white
white ppt dissolves	cream ppt does not dissolve	pale yellow ppt does not dissolve	no ppt
pale yellow ppt does not dissolve	no ppt	white ppt dissolves	cream ppt dissolves
when dil. ammonia added		when conc. (8M) ammonia is added	

Puzzle 3 – answers

halide ion		colour of ppt when $AgNO_3(aq)$ is added	
Cl^-	I^-	cream	no ppt
Br^-	F^-	pale yellow	white
pale yellow ppt does not dissolve	white ppt dissolves	no ppt	cream ppt dissolves
no ppt	cream ppt does not dissolve	white ppt dissolves	pale yellow ppt does not dissolve
when dil. ammonia added		when conc. (8M) ammonia is added	