

Sodium halide reactions with conc. H₂SO₄

Before you answer the puzzle below fill in the table results of reaction of sodium halides with concentrated H_2SO_4 .

sodium halide	observations when conc. H₂SO₄ is added	hydrogen halide produced	other products
NaF	no colour change, acidic gas	HF	Na ₂ SO ₄
NaCl			
NaBr	orange colour (gas/liquid) formed, acidic gas produced, and dichromate paper from orange to green		
	black solid, acidic gas formed, lead ethanoate paper darkened	HI	Na ₂ SO ₄ + H ₂ S + I ₂ +

Gridlock 1

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

sodium halide		hydrogen halide produced	
NaCl			HF
	HBr		Na ₂ SO ₄ + H ₂ S + I ₂ +
hydrogen ha	lide produced	other p	roducts





gridlocks – can you unlock the grid?

Gridlock 2

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

sodium halide		obs. when conc. H ₂ SO ₄ is added	
NaCl			
		black solid, acidic gas formed, lead ethanoate paper darkened	
		Na ₂ SO ₄	Na ₂ SO ₄ + SO ₂ + Br ₂
	HBr		
hydrogen halide produced		other p	roducts

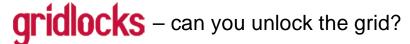
Gridlock 3

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

sodium halide		obs. when conc. H ₂ SO ₄ is added	
NaF			black solid, acidic gas formed, lead ethanoate paper darkened
	Nal	no colour change, acidic gas	
	HBr		
		Na ₂ SO ₄	
hydrogen halide produced		other p	roducts







Sodium halide reactions with conc. H₂SO₄ – answers

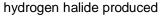
Before you answer the puzzle below fill in the table results of reaction of sodium halides with concentrated H_2SO_4 .

sodium halide	observations when conc. H ₂ SO ₄ is added	hydrogen halide produced	other products
NaF	no colour change, acidic gas	HF	Na ₂ SO ₄
NaCl	no colour change, acidic gas	HCI	Na ₂ SO ₄
NaBr	orange colour (gas/liquid) formed, acidic gas produced, and dichromate paper from orange to green	HBr	Na ₂ SO ₄ + SO ₂ + Br ₂
Nal	black solid, acidic gas formed, lead ethanoate paper darkened	HI	Na ₂ SO ₄ + H ₂ S + I ₂ + SO ₂

Puzzle 1 - answers

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

sodium halide		hydrogen halide produced	
NaCl	Nal	HBr	HF
NaBr	NaF	НІ	HCI
HF	HBr	Na ₂ SO ₄	Na ₂ SO ₄ + H ₂ S + I ₂ + SO ₂
HI	HCI	Na ₂ SO ₄	Na ₂ SO ₄ + SO ₂ + Br ₂



other products





gridlocks – can you unlock the grid?

Puzzle 2 - answers

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

sodium halide		obs. when conc. H ₂ SO ₄ is added	
NaCl	Nal	orange colour (gas/liquid) formed, acidic gas produced, and dichromate paper from orange to green	no colour change, acidic gas
NaBr	NaF	black solid, acidic gas formed, lead ethanoate paper darkened	no colour change, acidic gas
н	HCI	Na₂SO₄	Na ₂ SO ₄ + SO ₂ + Br ₂
HF	HBr	Na ₂ SO ₄	Na ₂ SO ₄ + H ₂ S + I ₂ + SO ₂
hydrogen halide produced		other p	roducts

Puzzle 3 - answers

sodium halide		obs. when conc.	H ₂ SO ₄ is added
NaF	NaCl	orange colour (gas/liquid) formed, acidic gas produced, and dichromate paper from orange to green	black solid, acidic gas formed, lead ethanoate paper darkened
NaBr	Nal	no colour change, acidic gas	no colour change, acidic gas
HCI	HBr	Na ₂ SO ₄ + H ₂ S + I ₂ + SO ₂	Na ₂ SO ₄
HI	HF	Na ₂ SO ₄	Na ₂ SO ₄ + SO ₂ + Br ₂



hydrogen halide produced



other products