

## Activity 6: Electrolysis.

Name	Class:
Teacher:	Date:

Students carried out the electrolysis of various aqueous solutions. The results are shown below

<b><i>Solution</i></b>	<b><i>Ions present</i></b>	<b><i>Product at Cathode(+)</i></b>	<b><i>Product at Anode(-)</i></b>
Copper(II)Sulphate		Copper	Oxygen
Copper(II)Chloride		Copper	Chlorine
Sodium Bromide		Hydrogen	Bromine
Potassium Chloride		Hydrogen	Chlorine
Sodium Carbonate		Hydrogen	Oxygen
Potassium Nitrate		Hydrogen	Oxygen
Calcium Carbonate		Hydrogen	Oxygen

1. Complete the table above.

2. Which gas is given off at the cathode when the electrolyte contains a reactive metal?

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3. Can you think of a rule for the product at the anode?

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4. Complete the table for the balanced ionic equations representing the reactions that occur at the anode and cathode.

<b><i>Solution</i></b>	<b><i>Cathode reaction</i></b>	<b><i>Anode reaction</i></b>
Copper(II)Sulphate	$\text{Cu}^{2+} + 2\text{e} \longrightarrow \text{Cu}$	$4\text{OH}^- - 4\text{e} \longrightarrow \text{O}_2 + \text{H}_2\text{O}$
Copper(II)Chloride		$2\text{Cl}^- - 2\text{e} \longrightarrow \text{Cl}_2$
Sodium Bromide		
Potassium Chloride		
Sodium Carbonate		
Potassium Nitrate		
Calcium Sulphate		

\* Rule At anode lose electrons, At cathode gain electrons\*