**ELECTROLYSIS**

**Introduction**

Molten ionic compounds conduct electricity and can therefore be electrolysed.

Aqueous solutions of ionic compounds conduct electricity and can also be electrolysed.

All aqueous solutions contain H+ and OH- ions in addition to the ions from the ionic compound.

It is possible to predict the products of the electrolysis of a molten or aqueous electrolyte.

**Procedure**

Watch the videos and answer the questions

You do not need to watch the entire length of the video; just enough to answer the questions.

1) the electrolysis of molten PbBr2 <https://www.youtube.com/watch?v=cpf9oNRZy-w>

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| --- | --- | --- |
| (a) | Why does no current flow when the PbBr2 is solid? |  |
| (b) | Which element is produced at the cathode? What does it look like? |  |
| (c) | Which element is produced at the anode? What does it look like? |  |

2) the electrolysis of NaOH(aq) [www.youtube.com/watch?v=vFR9zUGt2C4](http://www.youtube.com/watch?v=vFR9zUGt2C4)

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| --- | --- | --- |
| (a) | Which element is produced at the cathode? |  |
| (b) | Which element is produced at the anode? |  |
| (c) | Why is sodium not produced in this reaction? |  |
| (e) | Explain why different volumes of gas were produced at the two electrodes |  |

3) The electrolysis of CuCl2(aq) [www.youtube.com/watch?v=mIT-\_nghOB4](http://www.youtube.com/watch?v=mIT-_nghOB4)

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| --- | --- | --- |
| (a) | Which element is produced at the cathode? |  |
| (b) | Which element is produced at the anode? |  |
| (c) | How did the demonstrator identify the product at the cathode? |  |
| (d) | How did the demonstrator identify the product at the anode? |  |
| (e) | If you carried out this experiment with a much more dilute solution of copper chloride, which gas would have been produced at the anode instead? |  |

4) Electroplating a metal with copper <https://www.youtube.com/watch?v=gTjWkeSpRqk>

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| --- | --- | --- |
| (a) | What substance was dissolved in water to make the electrolyte? |  |
| (b) | How would you change this apparatus to coat an iron nail with a layer of silver? |  |