Electrolysis

Define the following key words:

Electrode\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Anode\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cathode\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Electrolyte\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sketch a diagram below to show the equipment required to carry out the electrolysis of an aqueous solution:

At the anode (+) ions gain/lose electrons.

At the cathode (-) ions gain/lose electrons.

Ionic compounds do not conduct electricity when solid but do when molten or dissolved. Explain why.

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What are the products when the following molten salts undergo electrolysis?

|  |  |  |
| --- | --- | --- |
| **Salt** | **Product at anode(+)** | **Product at cathode (-)** |
| Zinc Chloride |  |  |
| Lead Bromide |  |  |
| Aluminium Oxide |  |  |
| Iron(III)Chloride |  |  |

What are the products when the following aqueous salts undergo electrolysis? (use the reactivity series to help)

|  |  |  |
| --- | --- | --- |
| **Salt** | **Product at anode(+)** | **Product at cathode (-)** |
| Zinc Chloride |  |  |
| Sodium Nitrate |  |  |
| Aluminium Oxide |  |  |
| Copper Sulphate |  |  |

**Higher Tier**

Write balanced ionic half equations to show the products formed when the following molten salts are electrolysed:

Lead Iodide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Potassium Chloride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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