

Knowledge



1. H^+ ions
2. An acid where the compound fully dissociates in solution
3. The tendency of the metal to lose electrons and form ions
4. $\text{H}^+ + \text{OH}^- \rightarrow \text{H}_2\text{O}$
5. It increases by a factor of 10
6. Reduction is the gain of electrons or loss of electrons
7. Oxidation and reduction both occur
8. Splitting a compound using electricity

9. They are too reactive to be extracted using reduction with carbon

10. H^+ and OH^- ions

11. Cathode and anode

12. Loss of electrons or the gain of oxygen

Application

1. $2\text{Fe}_2\text{O}_3 + 3\text{C} \rightarrow 3\text{CO}_2 + 4\text{Fe}$ carbon is oxidised, iron oxide is reduced
2. Sodium chloride can only be electrolysed when molten and it has a very high melting point because of the strong bonds in the giant ionic lattice.

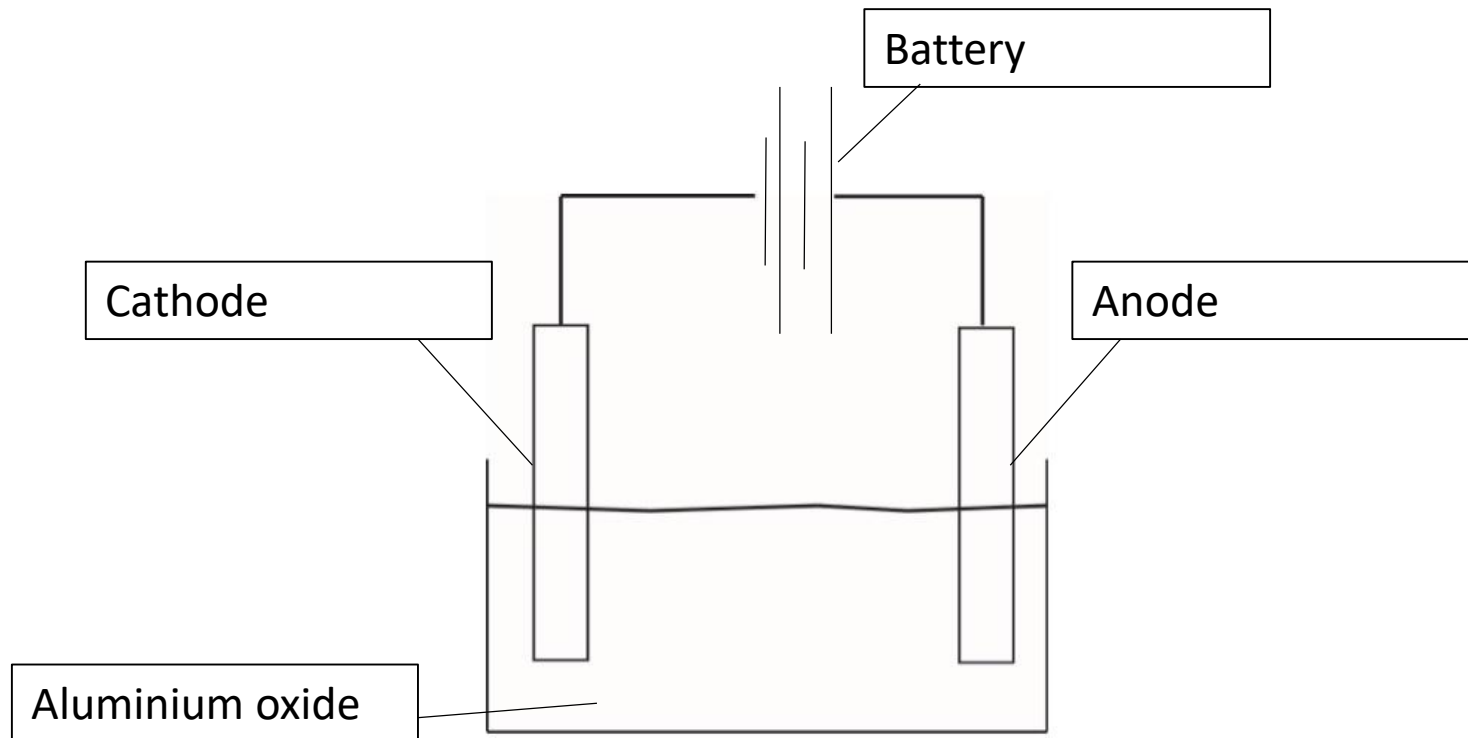
3.

Gas	How to do the test	Positive result
Hydrogen	Hold a lit splint over the tube	Squeaky pop
Oxygen	Put a glowing splint into the gas	The splint will relight
Chlorine	Put damp litmus paper into the gas	The litmus paper will be bleached of its colour

4. Potassium, sodium, lithium, calcium, magnesium, iron

5. Hydrogen is given off at the cathode as it is less reactive than sodium

6.



7. To lower the melting point

8. When the aluminium oxide is molten, aluminium ions are attracted to the cathode, where they gain 3 electrons to form Aluminium atoms. Oxide ions are attracted to the anode where they lose 2 electrons to form oxygen.



9. Cathode

