

Hydrogen-Oxygen Fuel Cell

Advantages

- Will supply same potential difference as long as fuel is supplied
- Retains efficiency with time
- Can provide a source of drinking water on spacecraft
- Water is the only 'waste' product

Disadvantages

- Hydrogen fuel is explosive and difficult to store safely
- Produce a relatively low potential difference, so a number of cells required
- Expensive, compared with lead-acid batteries

Equations



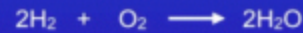
At negative electrode

Note: The anode is labelled negative because that is where the electrons enter the wire.



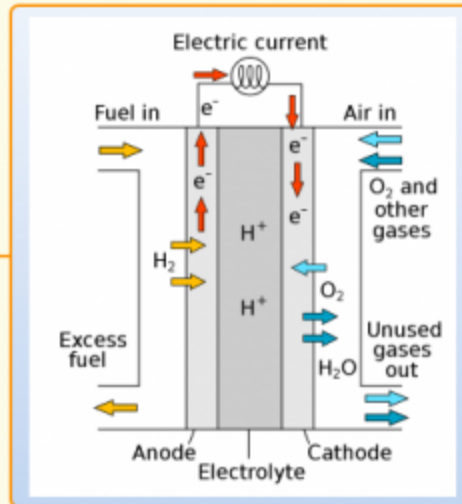
At the positive electrode

Note: The cathode is labelled positive because that is where the electrons leave the wire



Full equation

The hydrogen is being oxidised



- Fuel (Hydrogen) Enters On One Side
- Oxygen Enters On The Other Side
- Catalyst (Platinum) Action Separates Electrons from H Atoms
- H+ Ions Move To The Right Through The Electrolyte
- Electrons Travel As An External Electric Current
- H+ Ions And Electrons Combine At The Cathode
- Water, The Only 'Waste' Product, Is Removed