

1. What is electrolysis?

2. Describe, in detail, how hydrogen is formed through the process of electrolysis.

3. Write the balanced equation for the electrolysis of water.



4. What is the ratio of the hydrogen gas and oxygen gas produced by electrolysis? Explain.

5. Theoretically, how much pure water would be required to produce one kilogram of hydrogen.



6. Complete the properties of the three main types of water electrolyzers in table below.

Property	Alkaline Electrolyser	Polymer Electrolyte Membrane Electrolyser (PEM)	Solid Oxide Electrolyser (SOE)
Electrolyte			
Electrode/ Catalyst			
Electrical Efficiency (kWh to produce 1kg H ₂)			
Operating Temperature			
Anode Half Reaction			
Cathode Half Reaction			



7. Use the properties in the table above and complete the Venn diagram.



