

- (e) The hydrogen gas needed to power a car for 400 km would occupy a large volume.

Suggest **one** way that this volume can be reduced.

(1)

- (e) any **one** from:

- under (higher) pressure
allow increase concentration
- cool
allow condense
- absorb / adsorb in a solid
allow store as a liquid / solid
allow develop more efficient engines

Give **two** advantages of using hydrogen fuel cells instead of using rechargeable cells to power cars. **(separate only)**

1 _____

2 _____

(2)

- (b) any **two** from: (hydrogen fuel cells)

allow converse arguments for a rechargeable cell

- no toxic chemicals to dispose of at the end of the cell's life
- take less time to refuel (than to recharge rechargeable cells)
- travel further before refuelling (than before recharging rechargeable cells)
allow has a greater range
- no loss of efficiency (over time)
allow does not lose capacity / range in cold weather 2