

Activity 4 – Chemistry

Question 1

- 6 Some cars in Brazil use ethanol, C_2H_5OH , as a fuel instead of petrol.

The ethanol is made by the fermentation of glucose which is obtained from sugar cane.

The sugar is extracted from the sugar cane and then dissolved in water to make a sugar solution.

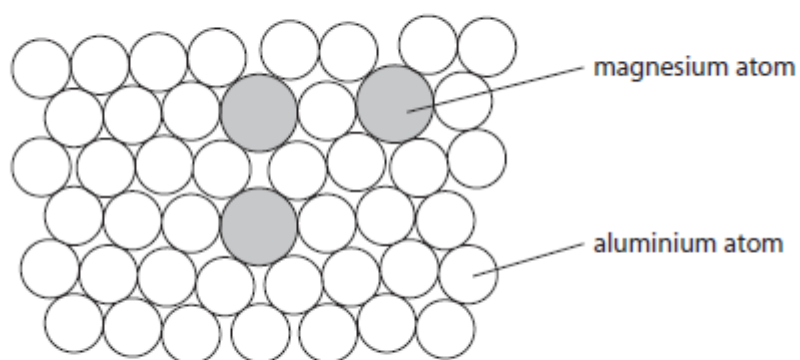
- (iii) Explain why fermentation is done in the absence of air.

(2)

Question 2

- (c) Magnalium is an alloy of aluminium and magnesium.

The diagram shows how the atoms are arranged in this alloy.



- (ii) Explain why magnalium is harder than aluminium.

(3)

(iii)	<p>An explanation using either of the following linked pairs:</p> <p>M1 oxygen in the air would react with ethanol</p> <p>M2 to form ethanoic acid</p> <p>OR</p> <p>M1 the fermentation/reaction/respiration needs to be anaerobic</p> <p>M2 ethanol would not be formed /CO₂ and H₂O would form</p>	<p>ACCEPT ethanol would be oxidised</p> <p>ALLOW to form carboxylic acid</p> <p>ALLOW to form vinegar</p>	2
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(ii)	<p>An explanation that links together the following three points:</p> <p>M1 the regular arrangement of atoms is distorted/disrupted OWTTE</p> <p>M2 because magnesium atoms are larger than aluminium atoms</p> <p>M3 and therefore it is more difficult for the layers to slide over one another</p>	<p>ALLOW lattice/layers/rows of atoms are disrupted/distorted</p> <p>ALLOW lattice/layers/rows of atoms less regular</p> <p>ALLOW magnesium and aluminium atoms are of different sizes</p> <p>ALLOW layers cannot (as easily) slide over one another</p> <p>IGNORE references to strength of metallic bonds</p>	3
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