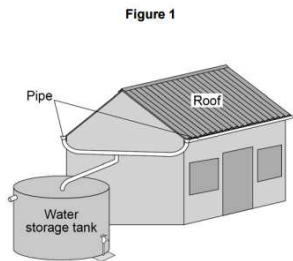


Rainwater is collected from the roofs of houses as shown in Figure 1.



The water in the storage tank is **not** potable.

What does potable mean?

Tick **one** box.

- Contains dissolved substances
- Pure
- Safe to drink
- Tastes nice

Why should the water in the tank be filtered to make it potable?

Tick **one** box.

- To kill microbes
- To remove dissolved gases
- To remove dissolved solids
- To remove undissolved solids

A gas which bleaches litmus paper can be added to the water to make it potable.

Name this gas and explain why it is added.

How could water be tested to show it is pure?

Give the expected result of the test for pure water.

Complete the definitions

finite resources	
renewable resources	
resources	
sustainability	
sustainable	

Suggest what should happen to waste glass to reduce the use of resources.

Explain how you could obtain potable water from waste, ground and salt water.

Ethene is used to make poly(ethene).

Poly(ethene) is used to make plastic bags.

Table 1 shows data from a Life Cycle Assessment (LCA) for a plastic bag and a paper bag.

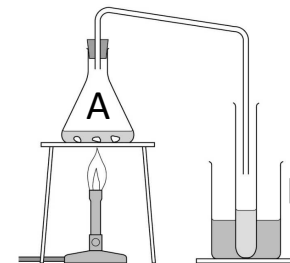
Table 1

	Plastic bag	Paper bag
Raw materials	Crude oil or natural gas	Wood
Energy used in MJ	1.5	1.7
Mass of solid waste in g	14	50
Mass of CO ₂ produced in kg	0.23	0.53
Volume of fresh water used in dm ³	255	4 520

A company stated: 'A Life Cycle Assessment shows that using plastic bags has less environmental impact than using paper bags'.

Evaluate this statement. Use your knowledge and the information from Table 1. [6 marks]

Label the apparatus on the diagram.



Explain the processes happening in the apparatus. You must include the processes happening at A and B.