

GCSE Chemistry B (Twenty First Century Science)
J258/02 Depth in chemistry (Foundation Tier)

Question Set 9

1

Soft drinks are sold in containers made from PET (a polymer), aluminium and glass.

All three containers are non-biodegradable.
Many people want to choose containers that cause less harm to the environment.

Table 9.1 shows some information about the life cycle of the containers.

	Total life cycle energy and waste per 1000 litres of drink		
	Energy use (GJ)	Waste produced	
		Mass (kg)	Volume (m ³)
PET bottle	4.1	48	0.2
Aluminium can	5.9	120	0.3
Glass bottle	9.8	730	0.6

Table 9.1

- (a) Use the data from **Table 9.1** to explain why all of the containers cause some harm to the environment and decide which container causes the least harm. [6]
- (b) **Table 9.1** does not include all of the factors needed to do a full life cycle assessment for the drinks containers.

Which **two** factors will have the biggest effect on the life cycle assessment of the drinks containers?

Tick (✓) **two** boxes.

The amount of sugar in each drink.

The distances that the containers have to be transported.

The design of the label on the container.

The amount of water used to manufacture the containers.

Whether the containers are used for fizzy or non-fizzy drinks.

[2]

Total Marks for Question Set 9 : 8

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