

3 (a) Define *specific latent heat*.

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(b) A beaker containing a liquid is placed on a balance, as shown in Fig. 3.1.

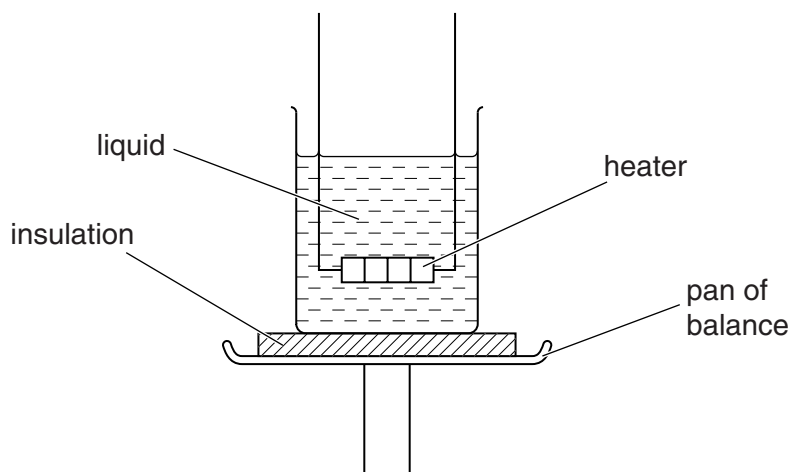


Fig. 3.1

A heater of power 110W is immersed in the liquid. The heater is switched on and, when the liquid is boiling, balance readings m are taken at corresponding times t .

A graph of the variation with time t of the balance reading m is shown in Fig. 3.2.

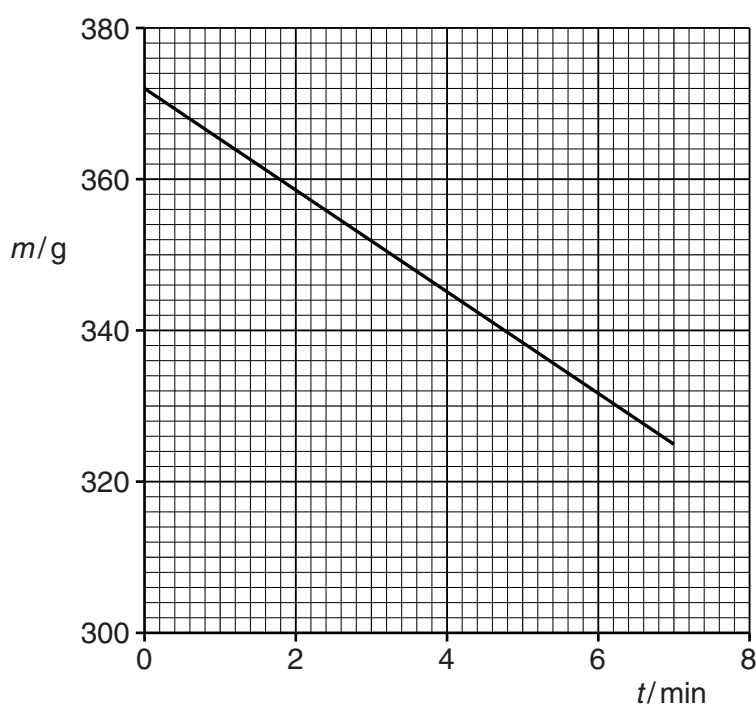


Fig. 3.2

- (i) State the feature of Fig. 3.2 which suggests that the liquid is boiling at a steady rate.

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.....[1]

- (ii) Use data from Fig. 3.2 to determine a value for the specific latent heat L of vaporisation of the liquid.

$$L = \text{..... J kg}^{-1} \text{ [3]}$$

- (iii) State, with a reason, whether the value determined in (ii) is likely to be an overestimate or an underestimate of the normally accepted value for the specific latent heat of vaporisation of the liquid.

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