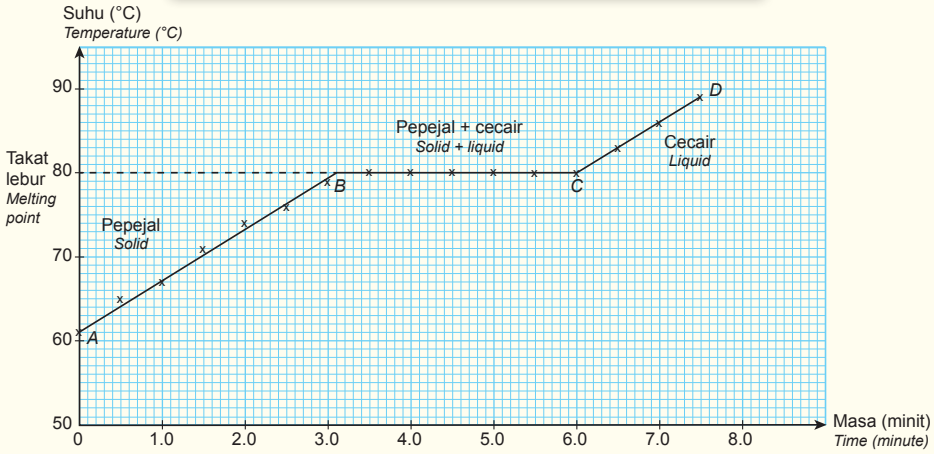
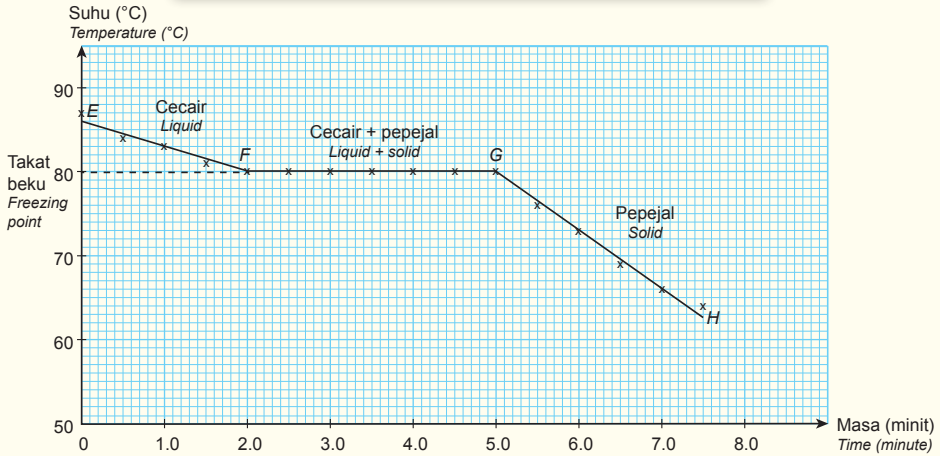
# PEMANASAN DAN PENYEJUKAN NAFTALENA NAFTALENA
## *HEATING AND COOLING OF NAPHTHALENE*

### Pemanasan Naftalena / *Heating of Naphthalene*




| | |
|---|---|
| ***A*** | Naftalena wujud sebagai pepejal. / *Naphthalene exists as a solid.* |
| ***A* ke *B***<br>***A to B*** | Suhu meningkat. Apabila pepejal dipanaskan, tenaga haba diserap. Hal ini menyebabkan tenaga kinetik zarah-zarah bertambah dan bergetar dengan lebih cepat.<br>*Temperature increases. When the solid is heated, energy is absorbed. This causes the kinetic energy of the particles to increase and they vibrate more rapidly.* |
| ***B*** | Pepejal naftalena mula melebur. / *Solid naphthalene starts to melt.* |
| ***B* ke *C***<br>***B to C*** | Semasa proses peleburan, suhu naftalena tidak meningkat walaupun pemanasan diteruskan. Suhu kekal malar kerana tenaga haba yang diserap oleh zarah-zarah digunakan untuk mengatasi daya tarikan antara zarah-zarah supaya pepejal bertukar menjadi cecair. Pada suhu malar ini, pepejal dan cecair hadir.<br>*During the melting process, the temperature of naphthalene did not increase even though the heating is proceeded. The temperature remains constant because the heat energy absorbed by the particles is used to overcome the attraction forces between particles so that the solid can change to a liquid. At this temperature, solid and liquid are present.* |
| ***C*** | Semua pepejal naftalena telah melebur. / *All the solid naphthalene has melted.* |
| ***C* ke *D***<br>***C to D*** | Suhu meningkat. Zarah-zarah dalam cecair naftalena menyerap tenaga haba dan bergerak dengan lebih cepat.<br>*Temperature increases. The particles in the liquid naphthalene absorb heat energy and move more rapidly.* |

### Penyejukan Naftalena / *Cooling of Naphthalene*




| | |
|---|---|
| ***E*** | Naftalena wujud sebagai cecair. / *Naphthalene exists as a liquid.* |
| ***E* ke *F***<br>***E to F*** | Suhu menurun. Apabila cecair itu disejukkan, zarah-zarah dalam cecair naftalena kehilangan tenaga kinetik. Zarah-zarah bergerak dengan lebih perlahan.<br>*Temperature decreases. When the liquid is cooled, the particles in the liquid naphthalene lose kinetic energy. The particles move more slowly.* |
| ***F*** | Cecair naftalena mula membeku. / *Liquid naphthalene starts to freeze.* |
| ***F* ke *G***<br>***F to G*** | Semasa proses pembekuan, suhu kekal malar kerana haba yang terbebas ke persekitaran mengimbangi tenaga haba yang terbebas apabila zarah-zarah menarik antara satu sama lain untuk membentuk pepejal. Pada suhu malar ini, pepejal dan cecair hadir.<br>*During the freezing process, the temperature of naphthalene remains constant because the loss of heat to the surrounding is balanced by the heat energy released when the particles attract one another to form a solid. At this temperature, solid and liquid are present.* |
| ***G*** | Semua cecair naftalena telah membeku. / *All the liquid naphthalene has frozen.* |
| ***G* ke *H***<br>***G to H*** | Suhu menurun. Zarah-zarah dalam pepejal naftalena membebaskan tenaga haba dan bergetar dengan lebih perlahan.<br>*Temperature decreases. The particles in the solid naphthalene lose heat energy and vibrate more slowly.* |