



Shown above is the phase diagram for iodine. What are the melting and boiling points of iodine at atmospheric pressure?

**Atmospheric pressure corresponds to 101.3 kPa. The dotted line corresponding to this pressure crosses the boundary between solid and liquid at 113.6 °C. This is the normal melting point. The dotted line corresponding to this pressure crosses the boundary between liquid and gas at 184.4 °C. This is the normal boiling point.**

In what way would you need to change the conditions to make iodine, initially at room temperature and pressure, sublime?

**Under these conditions, iodine is a solid (shown by the dot on the phase diagram). To turn it from solid to gas (sublime) requires lowering the pressure (shown by the arrow on the diagram) until it is below that on the solid – gas boundary.**

Describe what will happen if pressure is applied to a sample of solid iodine.

**At room temperature and pressure, iodine is a solid (shown by the dot on the phase diagram). Increasing the pressure will not do anything to the phase.**