

Marks
2

- What physical state would water adopt under ambient conditions (1 atm and 25 °C) if it did not possess hydrogen bonding? Explain.

Water would be a gas.

The other hydrides of group 16 elements increase in boiling point as the molar mass increases, due to the increase in dispersion forces. H₂S is a gas. As the dispersion forces in water are weaker, it would be a gas too.

H₂O has an anomalously high boiling point due to its H-bonds. Without H-bonds it would have a boiling point below that of H₂S.