

## 2024 Higher Chemistry Paper 1 - Q11

Section: Nature's Chemistry

Topic: Fats and Oils

Question summary (Q11):

Edible oil molecules contain C=C double bonds that react with iodine. The iodine number (g I<sub>2</sub> per 100 g oil) measures unsaturation. Which oil has the lowest melting point?

Worked Solution:

- The more double bonds (higher iodine number), the greater the unsaturation.
- Greater unsaturation → molecules pack less efficiently → weaker van der Waals forces → lower melting point.
- Compare iodine numbers:  
Corn = 123  
Linseed = 179  
Olive = 81  
Soya = 130
- Linseed has the highest iodine number (179), so it has the lowest melting point.

Final Answer: B — Linseed

Revision Tips:

- Iodine number  $\propto$  degree of unsaturation (C=C).
- More C=C → lower melting point (liquid oils).
- Fats (more saturated) → higher melting points (solid at room temp).