

AI predicts vape flavours form toxic compounds

Slide by Neil Goalby. Available from rsc.li/45Qll5J

An artificial intelligence-based approach predicts many toxic or irritant compounds could form via thermal decomposition when vape users heat e-cigarette flavours in vaping devices. The compounds used are food flavourings which are deemed safe for consumption. However, the long-term health risks of heating and inhaling these chemicals are unknown.

Some e-liquid flavours are esters, which are used to produce fruit-based flavours popular with young people. These ester flavours can produce many reactive compounds on heating.



© Smetek/Science Photo Library

The esters in e-liquid flavours could be harmful to people who vape

Questions

1. Draw the ester functional group.
2. Explain why ester compounds have low boiling points.
3. Suggest why being safe for use as a food flavouring does not mean it is safe to vape.