

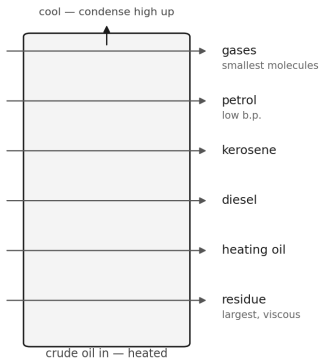
Topic 7: Organic chemistry

AQA GCSE Chemistry 8462 · spec 4.7 · sheets 7.1–7.3

Carbon's families

- Crude oil — plankton biomass in rocks — feeds the whole family.
- Functional groups give each series its reactions.
- Polymers — synthetic by design, natural by evolution.

Crude oil and fractions



- Alkanes C_nH_{2n+2} — methane, ethane, propane, butane.
- Distillation — evaporate, condense by boiling point; small high, large low.
- Bigger molecules — hotter boiling, thicker, less flammable.

Cracking and alkenes

- Catalytic — hot catalyst; steam — hot steam.
- Products — a smaller alkane plus an alkene.
- Bromine water — orange to colourless — the alkene test.

Functional-group families

- Alkenes $C=C$ — addition of hydrogen, water, halogens.
- Alcohols $-OH$ — sodium, combustion, water, oxidation.
- Acids $-COOH$ — carbonates, water (weak), alcohols (esters).

Polymers

addition — monomer to repeating unit



n of them join — no other product

condensation — two monomers, water out

(2 functional groups)



- Addition — monomers join, nothing lost, unit equals monomer.
- (HT) condensation — two functional groups each, water lost, polyester.
- Natural — DNA nucleotides; proteins, starch, cellulose.

Check yourself

- Checklist before you call this topic done.
- Four alkanes; column order; cracking equation; bromine-water colours.
- Three families by group; both polymer types; natural monomers.