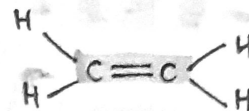


ALKENES

- contain one or more carbon-carbon double bonds
- C_nH_{2n} , $n \geq 2$
- unsaturated hydrocarbons (double bond)



name	molecular formula	structural formula
ethene	C_2H_4	$\begin{array}{c} H & & H \\ & \diagdown & / \\ & C = C \\ & / & \diagdown \\ H & & H \end{array}$
propene	C_3H_6	$\begin{array}{c} H & H & & H \\ & & & / \\ H-C & -C & =C \\ & & \diagdown \\ H & & H \end{array}$

physical properties

DOWN
↓

ethene
propene
butene

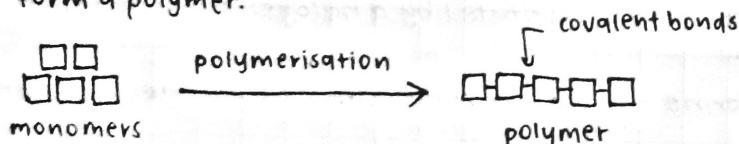
- boiling point increases

chemical properties

- combustion
 - alkenes burn in excess oxygen to form carbon dioxide and water vapour
 - undergo incomplete combustion to produce soot and carbon monoxide
- addition reactions
 - combining with another substance, so double bond breaks to form new single bonds. As a result, an unsaturated hydrocarbon becomes a saturated organic compound
 - hydrogenation (addition of hydrogen at $200^\circ C$ with nickel as a catalyst to form an alkane — vegetable oil to margarine)
 - bromination (addition of bromine to test for presence of unsaturated compounds — reddish brown to colourless)
 - addition polymerisation *

ADDITION POLYMERISATION

- at high temperature and pressure, a large number of alkene monomers join together to form a polymer.



poly(ethene)

