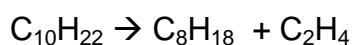


### Catalytic Cracking and Reforming

The heaviest fractions of refined oil need to be broken apart to produce some higher-value products such as gasoline and jet fuel. The process is called **cracking** and is useful to increase the quantity of the products.

The composition of the hydrocarbon chain is changed by chemical reactions under pressure. This catalytic process consists of **breaking down the larger, heavier and more complex hydrocarbon molecules into lighter ones**. The gasoline, which is obtained, contains a high proportion of unsaturated hydrocarbons.



decane → octane + ethene

**Catalytic reforming** processes are employed to increase the proportion of aromatics and branched-chain alkanes under controlled heat and pressure.

The process results in **better quality gasoline** due to its higher octane number and wider boiling range.

Paraffinic and naphthenic hydrocarbons are converted into **manufacture and petrochemical products** such as plastics (polyethene).

**Petrol** is a good fuel for a car engine because it ignites very easily. It has low viscosity and a low boiling point due to its short-chain molecules.

<https://www.youtube.com/watch?v=XsqIv4rWnEq>

(Hydrocarbon Cracking and Why It Is Done | The Chemistry Journey | The Fuse School)