

Oil refinery

An oil refinery is an industrial plant (industrial factory) where **crude oil is processed and refined into useful petroleum(oil) products.**

Raw or unprocessed oil (also referred to as "crude oil" or simply "crude") is not very useful in the form it comes out of the ground. It needs to be broken down into parts and refined before use in a solid material such as plastics and foams, or as petroleum(oil) fossil fuels as in the case of automobile and airplane engines.

Oil can be used in so many various ways because it contains **hydrocarbons** of different lengths such as **paraffins, aromatics**(having strong pleasant smell) , **alkenes** and **alkynes**.

Hydrocarbons are molecules of varying length and complexity made of hydrogen and carbon. Their various structures give them their differing properties and thereby uses. The trick in the oil refinement process is **separating and cleaning** these. All these different hydrocarbons have different boiling points, which means they can be separated by **distillation**(تقطير)

Once separated and any contaminants(sth that we don't need it) have been removed, the oil can be either sold without any further(more than usual) processing, or recombined to meet specific requirements (as in the case of fuels with different octane ratings) or even be reprocessed to break a heavy, long-chained oil into a lighter short-chained one.

Petroleum products

Petroleum oils are characterised as either black or white (clean). Black oils include crude oil, furnace oil, fuel oil, tar and asphalt. White oils include benzene, kerosene, and gasoline

Benzene: Benzene is an important organic chemical compound with the chemical formula C_6H_6 . Benzene is a natural constituent of oil and is one of the elementary petrochemicals.

Gasoline: transparent, petroleum-derived liquid that is used primarily as a fuel.

Fuel oil: Fuel oil, (also known as heavy oil, marine fuel or furnace oil) is a fraction obtained from petroleum distillation, either as a distillate or a residue.

