

Organic chemistry

The study of the compounds of carbon.

Homologous series

A series of compounds of uniform chemical type, showing gradations in physical properties, with a general formula for its members, where each member has a similar method of preparation and differs from the previous member by a (CH₂) unit.

Mercaptans

Sulfur compounds added to natural gas to give it a smell.

Octane number

A measure of the tendency of a fuel to cause knocking or to resist auto-ignition.

Isomerisation

Changing straight-chain alkanes into their isomers.

Catalytic cracking

Breaking down long-chain molecules into short-chain molecules for which there is greater demand.

Dehydrocyclisation

Using catalysts to form ring compounds.

Oxygenates

Fuels that contain oxygen.

Heat of reaction

The heat change when the number of moles of reactants stated in the balanced equation for the reaction react completely.

Heat of combustion

The heat change when one mole of a substance is completely burned in excess oxygen.

Heat of formation

The heat change that takes place when one mole of a compound in its standard state is formed from its elements in their standard states.

Bond energy

The energy required to break one mole of covalent bonds and to separate the neutral atoms completely from each other.

Kilogram calorific value

The heat energy produced when 1kg of a fuel is completely burned in oxygen.

Exothermic reaction

A reaction that produces heat.

Endothermic reaction

A reaction that takes in heat.

Hess's Law

The heat change for a reaction is the same whether it takes place in one step or many steps.

Auto-ignition

Ignition before the spark is produced.

Isomers

Compounds with the same chemical formula but a different structural formula.

Aliphatic

Consist of chains of carbon atoms

Hydrocarbons

Compounds made of only carbon and hydrogen atoms.

Unsaturated compound

A compound containing a carbon-carbon double or triple bond.

Aromatic compound

A compound that contains a benzene ring in its structure.

The Law of Conservation of Energy

Energy is neither created nor destroyed, it is simply changed from one form to another.