

→ Rapid combustion

E.g.:- burning of LPG



Combustion refers to the process where a substance burns in the presence of Oxygen, giving off heat and light in the process. You might have heard that certain substances are combustible whereas some are non-combustible. Combustible substances are simply those that undergo this process. But isn't Oxygen the most abundant substance on Earth? Doesn't it combine with most of the elements? But surely, not all reactions can be said to be similar to this process. Even many people believe rusting of Iron is a similar process as rusting involves iron combining with oxygen giving off heat. So what differentiates combustion from similar processes? It is the spontaneity with which substances react with Oxygen which defines a reaction.

When substances react spontaneously with Oxygen giving off heat and light, the heat released fuels the process further making the reaction violent and rapid. If nothing is done to control this process, it takes shape of a fire. It is this spontaneous and violent nature that distinguishes combustion from other similar processes taking place in the presence of Oxygen. Let us now study about the types of such reactions.

Complete combustion: When the reaction takes place in the presence of abundant Oxygen, the substances combine with Oxygen to their maximum extent. Such reactions have heat and light as visible by-product.

Incomplete combustion: These are defined as the reactions that occur in the absence of sufficient oxygen because of which substances are unable to burn completely. Such reactions leave Soot in the container due to this process along with the formation of Carbon monoxide which is an air pollutant.

Apart from classifications based on the availability of Oxygen, reactions are also categorized based on their spontaneity and rate of reaction. Reactions that proceed violently can either lead to fire or even explosion (which is also accompanied with loud noise). Formation of rust can also be categorized under slow combustion.