

# Definition: Redox Equilibrium



*You will learn from here more about redox reactions and redox equilibrium. But we will, first of all, enlighten you on what a chemical equilibrium is and then walk you through the understanding of a redox equilibrium.*

## What to note

*This lesson note is designated to assist college students of the classes of the lower sixth and upper sixth.*

Before we dive into discussing redox equilibrium, it will be advantageous if we first of all enlighten you on what a chemical equilibrium is all about. Then make a clear cut difference that exist in a redox equilibrium.

## A Chemical equilibrium

In Chemistry, **Chemical equilibrium** is a condition in the course of a reversible **chemical** reaction in which no net change in the amounts of reactants and products occurs.

That is to say, chemical equilibrium is the state in which both reactants and products are present in concentrations which have no further tendency to change with time so that there is no observable change in the properties of the system.

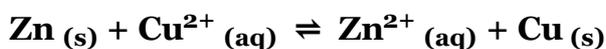
## What then is redox equilibrium

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To define what a redox equilibrium is, you will first need to know what a redox reaction is.

A redox equilibrium is an equilibrium established between the reactants and products of a redox reaction.

A good example of a redox reaction where equilibrium is established between the reactants and products is observed when Zinc granules placed in an aqueous solution of Copper (II) Sulphate of colour blue thins out and a reddish-brown precipitate of Copper is formed.



In the reaction above, Zn releases 2 electrons which are then captured by the  $\text{Cu}^{2+}$  in the Copper (II) Sulphate to form copper which then precipitates.

The overall reaction can be split into two separate processes showing the electron transfer.



The separate equations showing the specie which gains electrons and the one which loses electrons in a redox reaction is called a redox half equation.