

Chapter 3

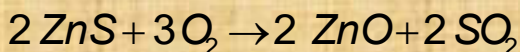
METALS AND NON-METALS

Extraction of metals in the middle of the activity series:

- The metals in the middle of the activity series are moderately reactive.

Ex: Zn, Fe, Pb

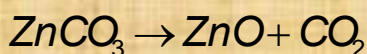
- These metals are generally available in the form of Sulphides and Carbonates.
- These ores must be converted into oxide form as it is easy to get metal from oxide by reduction.
- Sulphide ores are generally roasted.



- Carbonate ores are generally subjected to calcination.

Calcination :

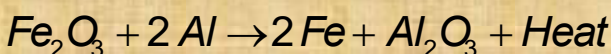
- The process of heating ore just below its melting point in absence of air is called as Calcination.



- In roasting or calcination, the ore is being converted into oxide of the metal.
- The metal oxides can be reduced into corresponding metal by heating it with a reducing agent like carbon



- Highly reactive metals like Na, Ca and Al can also be used as reducing agents to displace moderate reactive metals from their compounds.
- In Goldsmith aluminothermic process, which is used for welding of railway lines, Al metal is used as reducing agent to reduce Fe_2O_3 into Fe.



- This reaction is highly exothermic. So, iron metal formed will be in molten form.