Properties of Magnets

Property of attraction magnets attract small pieces of materials like iron, nickel, and cobalt. The property of a magnet to attract small pieces of iron seems to be concentrated in small regions at the ends of the magnet. These regions are called magnetic poles. The pole which points towards geographic north is called North pole of the magnet. The pole which points towards geographic south is called South Pole of the magnet.

Property of Direction

A freely suspended magnet always aligns itself in the North-South direction. Like-poles of magnets repel each other and unlike- poles attract each other, just as like-charges repel and unlike-charges attract. Since a magnet can attract small pieces of iron and also the opposite pole of another magnet, property of attraction is not a sure test to find whether a given piece is a magnet or not. Repulsion is a sure test to confirm whether a given piece is a magnet or not.

Property of Induction

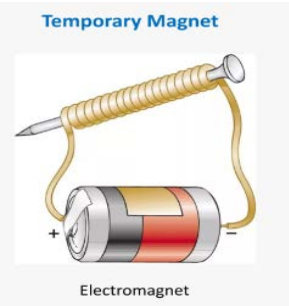
A magnet can induce magnetism in substances like soft iron, cobalt, nickel etc. Breaking a magnet successively into smaller pieces would still produce tiny magnets each with a North Pole and South Pole. The above phenomena is observed till we reach molecular stage.

Magnetic poles always exist in opposite pairs. Single magnetic poles never exist.

Temporary and Permanent Magnets

(A) Temporary Magnets: The magnets which cannot retain their magnetism for a long time are called temporary magnets. The temporary magnets are made from the soft iron.

Example: Electromagnet.



Properties of Magnets

☞ **(B) Permanent Magnets:** The magnets which retain their magnetism for a very long time are called permanent magnets. The permanent magnets are generally made from steel. More powerful permanent magnets are made from Alnico, an alloy of aluminium, nickel and cobalt or from ferrite. The ferrite made permanent magnets are quite strong.