

SCIENCE**ELECTRICAL CHARGES & CHARGED BODIES****ELECTRICAL CHARGES**

1. Benjamin Franklin introduced the concept of positive and negative charges.
2. Repulsion is the sure test for the detection of a charge.
3. In S.I. system the unit of charge is the coulomb.
4. Electric charge is a scalar quantity.
5. Like charges repel and unlike charges attract.
6. Electric charge is conserved. It can neither be created nor destroyed. It can only be transferred from one object to another.
7. The charge is quantized. The smallest charge is associated with an electron (-) and proton (+) is 1.610^{-19} coulomb.
8. All charges in nature exist as integral multiples of electron charge i.e. $q = n.e$.
9. A coulomb is equivalent to a charge of 6.24310^{18} electrons.

When a body is positively charged, its mass slightly decreases. When a body is negatively charged, its mass slightly increases.

Special Cases:

1. In the case of a conductor, its charge spreads over the entire outer surface and in the case of an insulator, its charge is localized
2. The electric Charge given to a conductor always resides on the outer surface of the conductor.

Types of charged bodies

The process of making a neutral body into a charged body is known as electrification. Electrification is a universal phenomenon.

A body can be electrically charged by anyone of the following three ways:

- Friction
- Contact
- Electrostatic induction