

Conductors and Insulators



Conductors

Conductors are defined as the materials or substances that allow electricity to flow through them.

Also, conductors allow heat to be transmitted through them. Examples of conductors are metals, the human body, Earth and animals.

The human body is a strong conductor. It, therefore, offers a resistance-free route from a current-carrying wire through the body for the current to flow.

Conductors have free electrons on their surface that allow the easy passage of current. This is the reason that electricity transmits freely through the conductors.



Applications of Conductors

In certain aspects, conductors are very useful. They have many real-life applications. **For example:**

- To check the temperature of a body, mercury is a common material in the thermometer.
- Aluminium finds use in the manufacture of foils for food preservation. It is also used in cooking vessels as it is a good conductor of electricity and heat.
- Iron is a common material used to conduct heat in vehicle engine manufacturing. The iron plate is composed of steel to briskly absorb heat.
- In the car radiators, conductors find their use in the eradication of heat away from the engine.

Conductors and Insulators



Insulators

The materials or substances that resist or don't allow the current to pass through them are insulators. They are, in general, solid in nature.

Often, in a number of systems, insulators are used as they do not allow heat to flow.

The resistivity is the property that makes insulators different from conductors.

Some good examples of insulators are wood, fabric, glass, mica, and quartz. Insulators provide protection against fire, sound, and, of course, electricity transmission. In addition, insulators have no free electrons at all. This is the predominant explanation of why they don't conduct electricity.



Examples of Insulators

- Glass is the strongest insulator as it has the highest resistivity.
- Plastic is a good insulator and is used to manufacture a variety of products.

A common material used in the manufacture of tyres, fire-resistant clothing, and slippers is rubber. This is because it is an insulator.