

Electric Current

Electric current is the continuous flow of electric charges through a material.

To produce *electric current*, charges must flow continuously from one place to another.

An electric circuit is a complete path through which electric charges can flow.

In a conductor atoms contain electrons that are loosely bound.

Ex: metal, salt water

In an insulator the electrons are tightly bound to their atoms and do not move easily.

Ex: rubber, glass, sand, plastic, wood

The difference in electrical potential energy between two places is called voltage.

You can think of *voltage* as the amount of *force* pushing an electric current.

A voltage source has two terminals that cause the charges to move around the circuit. Ex: battery

Current also depends on the resistance of the material.

The greater the resistance, the less current there is for a given voltage.

Resistance factors of the wire:

- material
- length
- diameter
- temperature