

Copper Wire Secrets



Have you ever wondered what those orange-brown wires, used in electric circuits, are made of? Well, you have guessed it right! The answer is

copper. Copper is used because it is a very good conductor of electricity.

Copper exists everywhere in our life, but actually we know it very limit, so let's to know copper's secret.

Copper is a transition metal that is positioned in the group 11 of the periodic table. The chemical formula of copper is Cu. Copper is abundantly found in parts of the United States, Canada, and Australia. Although there are many uses of copper, the most common use of this metal is in the manusecreturing of electrical wires and cables. Before we move on to the characteristics of copper wire, let us take a look at some secrets about the physical and chemical properties of copper.

secrets about Copper Wire

- Copper is the oldest metal to be used in making wires and cables. Copper cables are of three types, twisted pair cable, coaxial cable and twin axial cable.

- Copper cables are of three types, twisted pair cable, coaxial cable and twin axial cable.
- The copper cables used for indoor wiring and those used for outdoor wiring may appear to be the same but they are not, and the basic difference lies in the insulating jackets. While the insulating jackets used for outdoor wiring are made of substances that can withstand the natural elements, the cables made for indoor wiring come with an insulating jacket that is made of soft plastics such as PVC.
- When testing the flow of charge through a copper wire cable, one should not test while the cable is wound around the spool. This is because the magnetic field generated towards the center of the spool hinders the flow of charge through the cable.
- There are many uses of copper wire, the most important ones are those given below.
 - ◆Used in electrical wiring for homes and buildings
 - ◆Used in making jewelry because of its malleable proper
 - ◆Used for fishing in very deep water
 - ◆Used for internal wiring of electrical appliances
- The rate of flow of charge through a cable, including copper cables, depends on several secretors, the most important ones being capacitance, resistance, attenuation and near-end cross

talk.

- Resistance of a wire is the opposition to the current passing through the wire. Resistance of the wire depends on factors such as the thickness of the wire. Higher the resistance of the wire, lesser will be the amount of current through it.
- Capacitance is defined as the ability of a body to store electrical charge. The accumulation of oppositely charged particles on the core of the cable and its outer covering, decreases the amount of current flowing through the cable.
- The increased demand for copper wire in the U.S. has given rise to incidents of copper wire being stolen by people who sell them to make huge profits.

Some secrets about Copper Metal

Copper is a soft metal with a lustrous surface. It is denser than water with a specific gravity of 8.2 and has a chemical valency of +1 (cuprous) or +2 (cupric). Read on for some more secrets on copper.

- Copper is a naturally occurring element. Its atomic number is 29 and its name is derived from the Latin word *cuprum*.
- Pure metallic copper is orange in color with a tinge of red.
- The name *cuprum* originated from Cyprus, the mountain range from which the ancient Romans used to obtain this metal.
- Copper is one of the most abundant minerals on the earth's

surface and is found in all parts of the world.

- In addition to its pure metallic form, copper is also found in nature in the form of salts (sulfides and carbonates) and oxides.
- Copper is extracted from its ores by roasting (for oxide and carbonate ores) and smelting (sulfide ores). Both roasting and smelting are metallurgical processes.
- Copper is a metal that is a very good conductor of heat and electricity. It is only next to silver in the list of the best electrical conductors.
- Copper metal is highly malleable i.e. it can be beaten into thin sheets and ductile i.e. it can be drawn to form thin wires.
- Copper metal does not react with acids to replace hydrogen except for nitric acid which is a strong oxidizing agent. Copper reacts with nitric acid to form nitrates.
- Copper is corrosion resistant. On prolonged exposure to the atmosphere, a layer of green substance develops on the metal surface. This green coating is due to the formation of copper sulfate or copper chloride.
- Copper burns in oxygen till red-hot, to form oxides.
- The melting point of copper is 1083.4 degrees Centigrade.
- Copper is used in electrical wiring, in making utensils for cooking, boilers and steam engines and in making alloys with other

metals.

- Copper combines with other metals to form alloys such as brass, bronze, german silver, gunmetal and bell metal. Each of these alloys contains a mixture of copper and other metals in specific amounts.

This was about copper wire and its general characteristics. Hope the secrets given in this article has helped you get a better understanding of the properties of copper wire in general.