

OCC, continuous casted pure crystalline copper wire

Wire is mostly made from molten substance (i.e. copper, silver) first casted into long rods or bars that are heated and then eventually drawn through moulds that create thin wire, this is called annealing.

Now let's take copper as an example. During the last stage of the annealing process the copper crystals diffuse (see [Wikipedia](#)) due to the rapid cooling in the traditional casting/annealing process.

Because of this diffusion, the random orientation of the formed copper crystals in an irregular mosaic pattern, influence the behavior of the signal that later on should flow through the material in an unwanted manner. This influences the audio signals in an 'audiophile bad' way.

One of the ways to improve this flow of electrons can be the heating and cooling of the material afterwards. Also called Cryo treating, Advanced thermal treatment or likewise. But these are retroactive methods. Why not solve it at the beginning?

What was needed was a casting process that would provide a uniform crystalline pattern.

In 1986 the Continuous Casting (OCC) process was introduced to the world. High pure crystalline copper casting was developed by professor Ohno of the Chiba Institute of Technology in Japan. OCC is a single, long grain copper crystalline structure built by using a heated mould and relevant moulding speed, that solved the annealing process problems and created a better uniform crystalline structure. The results are small rods of pure copper, from which the wire can be drawn and we get single copper grain structures of over 700 feet in length!

In 2000, the technique of SGSS continuous casting of single Crystal, a new process to anneal wire, got great success in cooperation with China's famous Lanzhou University. It has a characteristic of making a long metal wire with uniform crystalline structures.

High Pure Single Crystalline copper (OCC) is superior to OFC copper when used in the same cable construction. It's a much more expensive production method but it's worth the extra expense as we believe we have generated a far superior interconnect using SGSS materials in the conductors.

When making a study of crystal molecule boundary theory, it is known that the grain boundaries especially in the vertical conductor's axis are equal to a series of capacitors in series. When the audio wave of any frequency range pass through the grain boundaries, these grain boundary capacitors must be charged and discharged, and the wave can be reflected at the same time. As a result, the shape of a wave is out of original shape and the energy of the wave can be attenuated. The change of shape and energy of the signal wave influence the quality of signal transmission. The signal is not true to the original, and the distortion is called CCD (Cross Crystal Distortion).

The experiment proved the influence that the grain boundary of wire conductor does harm to audio signal transmission, though the electrical conductivity of noncrystalline mercury(Hg) is one tenth of copper, the quality of audio signal transportation is satisfactory. The theory of grain boundary doing harm to audio signal transportation is approved by people of the Hi-Fi world. They are of the same view that single crystal wire without grain boundary is most ideal wire, a lot of famous HI-Fi cables are made from single crystal copper. It is accepted that the single crystal copper is the most ideal conductor of Hi-Fi cable by more and more people of the Hi-Fi world.

Up to now, the SGSCC single crystal copper has been made into Hi-Fi signal cables. Speaker cables, microphone cables, guitar cables and plugs, and these cables are sold well all over the world. The sound effects of these Hi-Fi cables is remarkable. The background of tone quality is quiet, the timber is exquisite and sweet. The difference of sound effects between high frequency band and low frequency band is clearly. The diaphaneity, bloom, ambience and space perception of the sound are excellent. These Hi-Fi cables have come to the world standards of best quality wire and thousands of Hi-Fi lovers are keen on them.

Product Description

The whole rod/wire is only made from one grain, there are not any grain boundaries, It is mainly used to make Hi-Fi A/V cables, and It has been accepted that the single crystal copper is the ideal conductor of Hi-Fi cables by more and more people of the Hi-Fi world. The cables made of Single Crystal Copper, Its background of tone quality is quiet , The timber is exquisite and sweet. The distinguish of sound effects between high frequency band and low frequency band is clearly, the diaphaneity, bloom, ambience, and space perception of the sound are excellent, These cables have come to the best quality of world standard wires, and thousands of Hi-Fi lovers are keen on them.

Features:

High Purity - Lower Resistivity - High Elongation

Technical Data / Chemical Composition:

Cu:	more than 99.99%
Oxygen:	Less Than 5ppm
Other:	Less than 0.01%
Density:	8.94 G/Cubic Centimeter

Specifications:

SGSCC-4 5.0(Dia in mm) ≥ 320 (Tensile Strength Mpa) ≥ 2.0 (Elongation%) ≥ 98 (20°C%IACS)
99.997(Cu%)

Insulation: PTFE

(Text Ref: Wikipedia & Chiba institute of technology Japan)