

To: To the interested parties
From: Sibneotech LLC, Novosibirsk, Russia
Date: 2021



SUPER PURE OXYGEN-FREE COPPER

Chemical composition : 99.9995 – 99.99999+ % (ASTM B170)
Electrical conductivity : 104 – 105 % IACS

We have conducted preliminary research and experimental work and have created predictably functioning experimental equipment and an experimental product of predictable quality. We have developed our own technology allowing us to predict, produce and supervise a chemical compound of purity 5N+ and above. The basic necessary equipment for our technology was designed and made by ourselves or according to our specifications and drafts. We have received steady guaranteed results and have produced experimental product of the highest quality.

The product is unique in its characteristics and is probably the best or one of the best in the world in terms of its chemical purity and physical characteristics (*Electrical and Thermal conductivity etc.*).

For example, the Sigma - Aldrich catalogue (www.sigmaaldrich.com) lists the best copper as, "Cu 99.9999% trace metals basis". The resistivity of such "Cu 99.9999%" is listed as 1.673 $\mu\Omega\cdot\text{cm}$ at 20°C. In this case Electrical conductivity is only ~ 103.06% IACS. Copper ~99.995-8 % in accordance with GOST 859-2001 and ASTM B170 can possess such conductivity. *Some sources assert that for very pure "correct copper of 99.9999%", the electrical conductivity is not less than ~103.4-6% IACS and RRR ≥ 1000 .* Also, there are many other offers of Cu 5N-9N on the market. Often they are not even Cu 3N5 according to GOST 859-2001 and ASTM B170 (USA), and such copper will have the appropriate characteristics.

Our Super-Pure Oxygen-Free Copper in ingots.

Characteristics :

- *Chemical composition* 99,9995 – 99,99999+ % (ASTM B170 and GOST 859-2001)
- *Electrical conductivity* 104 – 105 % IACS
- *RRR* 1500 – 3000
- *Similar to monocrystal*

Shape, size and weight of an ingot : ingots are close to cylinder in shape, diameter of 85-95 mm, height/length of 100-150 mm (typical ~120-130 mm), weight ~6000-8000 gram (typical ~6500-7000 gram).

Our super-pure copper can be of interest in manufacturing of superthin wires and tapes, in micro- and nanoelectronics including radiative-steady, in nanophotonics, in manufacturing copper mirrors for research lasers, thermal bridges and other products especially working at low temperatures, in chemistry etc. Additional differences of our copper compared to other products will be at low temperatures, with the greatest differences somewhere in the interval of 5-20K (*Electrical and Thermal conductivity*), reflective ability is even in the interval of 5-50K. In various areas of uses, these differences can have different benefits and can have large price differences.

Our products are not laboratory samples and we can offer lots of up to 25-50 kg at one time and then afterwards discuss future deliveries. In case of interest and in the presence of made copper in the concrete moment, we can offer else from made copper. In case of long-term interest and guaranteed payment, we can prepare the manufacture (~10-15 months) and start monthly deliveries of 30-100 kg depending on the agreed requirements and restrictions to quality. We sincerely hope our copper can be of interest to you or your partners.

We shall be grateful if you make a cost examination of our product and let us know what price and quantity are of interest and in what area of use. We cannot find analogues on quality. Our copper is very high-quality and close to theoretical copper according to its physical characteristics.

Unfortunately, it cannot be cheap, but we hope that our copper may be of interest to you or your partners.