ELECTROVEK STEEL

# Metals. Quality. Partnership.

*Catalogue of products supplied 2015-2016*

Ukraine,
Dnipropetrovsk

# Content

# Company profile

Elektrovek-steel is a large metal trading company. Our offices and stocks are located in Ukraine and Russia. The product range includes stainless steel, nonferrous metals, nickel alloys, refractory and rare metals and, of course, pipes. We try to be closer to our customers. We have created a virtual office in UK, USA and Poland, with the direct telephone numbers for our partner comfort.

The company is constantly growing and developing. We are proud of stock range and quantity, quick availability, staff and sales development. Export geography includes more than 20 countries on 3 continents.


We try to develop, systematize and simplify workflows. Each delivery or internal task should be performed well. After all, the best advertising is satisfied customers, partners and suppliers. We are also co-operating with the highest number of companies and have only friends, not competitors.

Especially we improve the seamless stainless steel tubes, alloy tubes and pipes from special metals direction. The small-section seamless stainless steel tube production has been established. Production industry and pipes storage will be well promoted in the near future.

We plan to grow into the largest manufacturing and trading company. This will be achieved by continuous production improvement, processing, new high-tech processes introduction, by improving the delivery terms and staff performance.

# Heating resistant alloys

## Nichrome, nichrome wire, strip

**Ni80Cr20 (Nichrome)** alloy is a brand name for a nickel-chromium non-magnetic corrosion resistance wire. A common alloy is 80% nickel and 20% chromium, but there are many other ways to accommodate various applications. It is silvery-grey in color. Alloy has a high melting point of about 1400 °

## Fechral, fechral wire, strip

**Fe-Cr-Al** are heating alloys that consist of elements: Cr (12—15 %); Al (3,5—5,5 %); Si (1 %); Mn (0,7 %); the rest is Fe.

Fe-Cr-Al is a hard alloy that is hard to process. Alloy has high electric resistance (1,2—1,5 micro Ohm · m). The density is 7100-7300 kg/m3. Approximate melting point is 1450 °C. The highest working temperature is 1250—1400 °C. It is used in variety of products that offer heating.

# Special nickel alloys

## **Kovar – nimonic** (29NK Kovar, NP-2, HN30MDB, HN60VT, etc)

**Kovar** (trademark of Carpentner Technology Corp.) is a nickel-cobalt ferrous alloy designed to be compatible with the thermal expansion characteristics of borosilicate glass (~5×10-6 /K between 30 and 200°C, to ~10×10-6 /K at 800°C) in order to allow direct mechanical connections over a range of temperatures. It finds application in electroplated conductors entering glass envelopes of electronic parts such as vacuum tubes (valves), X-ray and microwave tubes and some light bulbs.
Nimonic - heat-resistant alloy on a nickel basis, contains Al, Ti, Cr, designed in 1942 in the UK by "Monde nickel company". There is a number of other Nimonic alloys. Depending on the desired combination of properties, it contains 0.5-6% of aluminum, 0.2-4% of titanium, 10-21% of chromium. Nimonic alloy maintains cobalt up to 22%, molybdenum up to 6%, and other components.

## **Monel, inconel, hastelloy** (Haynes 188, Monel 400, Inconel 750, etc.)

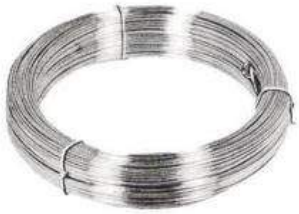
USA on the basis of nickel. It contains up to 9% of iron and 15% of chromium. Inconel is material for producing details of jet turbines in aircraft and rocket industry.

**Hastelloy** is corrosion resistant alloys on a nickel basis. It contains Cr, Mo. Hastelloy has a different percentage of components: molybdenum up to 30%, chromium up to 23%, iron up to 29%, carbon up to 0.15%.

**Monel** is a trademark of Special Metals Corp. for a series of nickel alloys, primarily composed of nickel (up to 67%) and, copper with some iron and other trace elements.

# Thermocouple wire

**Alumel**



**Chromel**

**Copel**

**Constantan**

**Tungsten-rhenium**

Physical properties are determined by the percentage of components. Alumel - is very plastic and is able to maintain its strength for a long time. Constantan is an alloy with iron, copper and chromel. It has a high electrical resistance, not dependent on the temperature.

Copel in the alloy with copper, iron and chromel, have similar properties with constantan and a large thermelectromotive force, they have zero temperature coefficient of electric resistance, heat-resistant up to 600°C and resistance to corrosion.

Chromel has a high heat-resistant and characterized by a high capacity to change thermelectromotive forces.

# Stainless steel

*(wire, rod, strip, sheet, hexagonal bar, angle, tube and pipe)*

# Titanium-metal

*(wire, rod, strip, sheet, tube and pipe)*

Stainless steel is used in industrial and manufacturing sectors. Thanks to its qualities of durability and aesthetics, stainless steel is used in construction and design. Stainless steel - metal, perfectly combined with a variety of building and decorative materials.

Titanium has a high melting point, low thermal conductivity and antifriction properties, but it can be easily forged and stamped. The cost of titanium is quite high and is linked mainly to the difficulty of extracting it from ores. Titan exceeds characteristics of most metals and alloys, first of all, corrosion resistance. Often titan is called eternal metal. By the demand for titanium is second only to iron, aluminum and magnesium.

# Minor metals *(rod, strip, bar, wire, sheet)*

**Zirconium**

**Tantalum**

**Rhenium**

**Indium**

**Hafnium**

**Magnesium**

**Niobium**

**Refractory** metals are a class of metals that are extraordinarily resistant to heat and wear. The expression is mostly used in the context of material science, metallurgy and engineering.

The most common definition includes five elements: two of the fifth period (niobium and molybdenum) and three of the sixth period (tantalum, tungsten, and rhenium).

# Tungsten *(electrode, wire, rod, foil, sheet, tube and pipe)*

The main tungsten alloy features are hardness and strength at high temperature. Most of the steel after heating at red heat and cooling in air lose their solidity. Tungsten doesn't. This property is called the red resistance.

Tool steel of tungsten makes available the most intense metal processing speeds of tens of meters per second.

# Molybdenum *(tube and pipe, wire, sheet, foil, rod)*

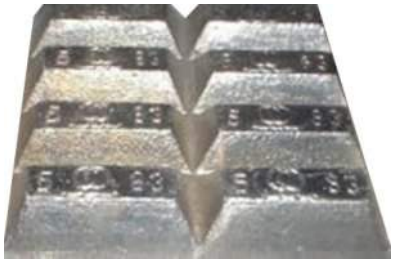




Molybdenum (often referred to as 'Moly') is valued as an alloying agent in structural and stainless steels because of its strength, corrosion resistance and ability to hold shape and operate at high temperatures.

# Babbitt

*(B16, B86, B88)*



**Babbitt** is low - melting alloy on the basis of lead or tin. In Ukraina and Russia mainly use two groups of babbitt. The first group on the basis of tin (GOST 1320 – 74) contains up to 90 % Sn, 5–6 % of the Si and 8–9 % of the Sb. And the second group on the basis of lead – GOST 1209–90.

# Solder

*(POS 40, POS 60)*

**Solder** is metal or alloy used for soldering as cluster (medium metal) between connecting elements. Solder's melting temperature is lower than connecting elements' meting temperature. Insignificant connecting metals heating and as a result metal structure changing absence is the main advantage of soldering comparing with welding.

# Tin

**Tin**, chemical sign Sn, item 50 in the periodic system, the atomic weight of 118,7, specific weight 5,846 g/cm3. It melts at 231,9 C; boils at 2620 degrees C.

# Bronze

*(tube, wire, rod, sheet, strip and foil)*

**Bronze** - an alloy of copper with other metals, the most often - with tin. Aluminum, silicon, lead, antimony, manganese, and other are used besides tin.

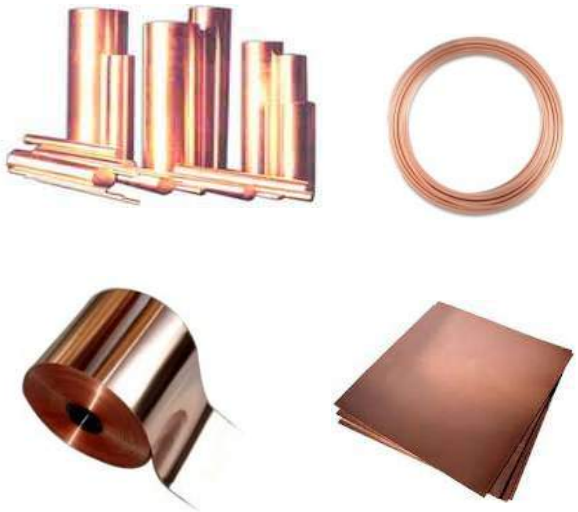
# Aluminum

*(tube and pipe, wire, rod, sheet, strip and foil)*

**Aluminum** is lightweight, relatively cheap. It has perfect reproduction of mechanical processing. The aluminum has very high conductivity, corrosion resistance and impact of the external environment, it is non-toxic, aesthetic - almost ideal material for interior design.

# Copper

*(tube and pipe, wire, rod, sheet, strip, cupronickel alloy)*



**Copper** is a chemical element with the symbol Cu and atomic number 29. It is a ductile metal with very high thermal and electrical conductivity. Pure copper is soft and malleable; an exposed surface has a reddish-orange tarnish. It is used as a conductor of heat and electricity, a building material, and a constituent of various metal alloys.

# Brass

*(tube and pipe, wire, rod, sheet, strip, hexagonal)*

**Brass** has a high thermal and electric conductivity, aesthetic appearance. It is biologically harmless, meets the most stringent hygiene standards. It differs from copper with greater strength and corrosion resistance and not only to the atmospheric and soil moisture (at the expense of zinc and aluminum), but also in sea water, in many organic acids. Especially improves corrosion resistance. addition of lead

# Steel tube

**Cold-rolled seamless**

**Hot-rolled seamless**

**Water-gas pipeline**

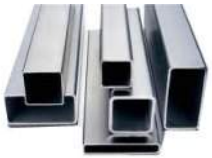
**Electro welded**

**Longitudinal electro welded**

**Rectangular**

**Galvanized steel**

**Square**



# Tool steel

**High speed tool**

**Pressed steel**

**Alloyed tool steel**

# Branches and representations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# *Thanks for watching*

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