

《レアメタルのインゴット、合金、製品》

No.	Products	Specification
1.	<b>Niobium</b> Ingots, strips, sheets, bars, wire, pipes	Niobium contents 99,8 % mass min Impurities % mass max: N <sub>2</sub> -0,01, O <sub>2</sub> -0,01, H <sub>2</sub> -0,001, C-0,01, Si-0,005, Ti-0,005, W+Mo-0,01, Ta-0,1, Fe-0,005. Ingots dimensions: diameter - 150±10mm, length - 500mm (raw surface) According to buyers requirements we can produce ingots with machined surface Strips: thickness - 0,1-10 mm, width - 50 mm min, length 300 mm. Wire: diameter - 0,25 - 3 mm, length 3000 mm min. Oxygen content in wire not more than 0,015% mass (up to 0,025 % mass for smallest sizes). Bars: diameter - 3-100 mm, length 100 mm min. According to buyers requirements we can produce niobium in other form, for example 100x100x8mm, 100x300x8mm e.t.c. Pipes: diameter Ø3,0-32mm, wall thickness ≠0,3-8,0mm, length 200mm min
2.	<b>Niobium based alloy with 1% Zr</b> Ingots, strips, sheets, bars, wire, pipes	Zirconium content 0,8-1,2 % mass. Impurities to be controlled: O <sub>2</sub> , N <sub>2</sub> , H <sub>2</sub> , C, Ti, Ta, W, Mo, Si, Fe. Ingots diameter 130-150 mm, length 100 mm min. Strips: thickness 0,1 - 10,0 mm, width 10-100 mm, length 300 mm min. Bars: diameter 3,0 - 120,0 mm, length 100 mm min. Wire: diameter 0,5-3,0 mm, length 3000 mm min Pipes: diameter Ø3,0-32mm, wall thickness ≠0,3-8,0mm, length 200 mm
3.	<b>Niobium based alloy with 1% Zr and 0,1% C</b> Ingots, strips, sheets, bars, wire, pipes	Zirconium content –1,0-1,4 % mass, Carbon content – 0,08-0,12 % mass Impurities to be controlled: O <sub>2</sub> , N <sub>2</sub> , H <sub>2</sub> , C, Ti, Ta, W, Mo, Si, Fe. Ingots diameter 130-150 mm, length 100 mm min. Strips: thickness 0,1 - 10,0 mm, width 10-100 mm, length 300 mm min. Bars: diameter 3,0 - 120,0 mm, length 100 mm min. Wire: diameter 0,5-3,0 mm, length 3000 mm min Pipes: diameter Ø3,0-32mm, wall thickness ≠0,3-8,0mm, length 200 mm
4.	<b>Niobium based alloy with 5% W, 2% Mo and 1% Zr</b> Ingots, strips, sheets, bars, wire, pipes	Tungsten content 4,5-5,5 % mass, Molybdenum content 1,7-2,3 % mass, Zirconium content 0,7-1,15 % mass. Impurities to be controlled: O <sub>2</sub> , N <sub>2</sub> , H <sub>2</sub> , C, Ti, Al, Ta, W, Mo, Si, Fe. Ingots diameter 130-150 mm, length 100 mm min. Strips: thickness 0,1 - 10,0 mm, width 10-100 mm, length 300 mm min. Bars: diameter 3,0 - 120,0 mm, length 100 mm min. Wire: diameter 0,4-3,0 mm, length 3000 mm min Pipes: diameter Ø3,0-32mm, wall thickness ≠0,3-8,0mm, length 200 mm
5.	<b>Niobium based alloy with 3,8 – 5,2% Mo</b> strips, bars, wire, pipes	Molybdenum content 1,7-2,3 % mass, Zirconium content 3,8-5,2 % mass Impurities to be controlled: O <sub>2</sub> , N <sub>2</sub> , H <sub>2</sub> , C, Ti, Al, Ta, W, Mo, Si, Fe. Strips: thickness 0,1-12,0 mm, width 50-250 mm, length 150 mm min. Bars: diameter 3,0-120,0 mm, length 100 mm min. Pipes: diameter Ø3,0-32mm, wall thickness ≠0,3-8,0mm, length 200 mm.
6.	<b>Niobium based alloy with 5% W, 2% Mo, 1% Zr and 0,1% C</b> Ingots, bars	Tungsten content 9,5-11,5% mass, molybdenum content 4,5-5,7 % mass, zirconium content 1,0-1,5% mass, carbon 0,09-0,05% mass. Ingots diameter 150 mm, bars diameter 70 mm.
7.	<b>Zirconium</b> Strips	Zirconium content 99,7 % mass min. Impurities % mass max.: Fe-0,05, Al-0,005, Si-0,005, Ti-0,005, Nb-0,03, Cu-0,005, O <sub>2</sub> -0,05, N <sub>2</sub> -0,01, C-0,03, Hf-0,05. Strips thickness 0,1 - 10,0 mm, width min 50 mm, length 300 mm min According to buyers requirements we can produce zirconium in other form
8.	<b>Vanadium</b> Strips, wire, bars	Vanadium content for VnM-1 grade – not less than 99,3 % mass, for ВНМ-0 grade – not less than 99,6% mass.

		<p>Impurities content for VnM-1 grade % mass max: Fe-0,15, Al-0,2, Si-0,2, N<sub>2</sub>-0,01, H<sub>2</sub>-0,001, O<sub>2</sub>-0,03, C-0,03.</p> <p>Impurities content for VnM-0 grade % mass max: Fe-0,06, Al-0,1, Si-0,15, N<sub>2</sub>-0,01, H<sub>2</sub>-0,001, O<sub>2</sub>-0,02, C-0,02.</p> <p>Strips thickness 0,1 - 10,0 mm, width 50 mm min, длиной не менее 100 мм.</p> <p>Wire diameter 0,5 - 3,0 mm, length 2000 mm min</p> <p>Bars diameter 3,0 - 100 mm, length 100 mm min</p>
9.	<b>Vanadium based alloy with 8% Cr strips</b>	<p>Chromium content 7,0-9,5 % mass.</p> <p>Impurities to be controlled: O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, C, Al, Fe,</p> <p>Strips thickness 1,0-2,0 mm, width 50 mm, length 200 mm.</p>
10.	<b>Hafnium</b> Strips, wire, bars	<p>Hafnium content for GFI-1 grade – not less than 99,8 % mass</p> <p>Impurities content for GFI-1 grade % mass max: O<sub>2</sub>-0,03, N<sub>2</sub>-0,015, C-0,03, Si-0,02, Fe-0,05, Zr-1,0.</p> <p>Strips: thickness 0,3 - 5,0 mm, width 40 mm min, length 100 mm min.</p> <p>Wire: diameter 1,0-3,0 mm, length 300 mm min.</p> <p>Bars: diameter 3,0-50,0 mm, length 50 mm min.</p>
11.	<b>Rhenium metal</b> In tablet form	<p>Rhenium content 99,88 % mass min.</p> <p>Impurities content % mass max: Fe-0,0020; Mg-0,0002; Si-0,0010; , Ni-0,0010; Mo-0,0010; Cu-0,0005; Al-0,0007; Ca-0,0010; K-0,0070; O<sub>2</sub>-0,10.</p> <p>Tablets: diameter 15-40 mm, height 10-20 mm (according to buyers requirements).</p>
12.	<b>Rhenium foil</b>	<p>Rhenium content 99,88 % mass min.</p> <p>Impurities content % mass max: O<sub>2</sub>-0,01, N<sub>2</sub>-0,005, C-0,01, Al-0,0005, Fe-0,005, Si-0,003, Cu-0,0003, Mo-0,005, Ni-0,0001, K-0,001, Ca-0,001, Mg-0,0002.</p> <p>Foil thickness 0,03-0,1 mm, width 10 mm min, length 30 mm.</p>
13.	<b>Gallium Ingots</b>	<p>Gallium content – 99,99÷99,9999% mass</p> <p>Impurities to be controlled:</p> <p>For grade GI-0 (99,99% mass) – Al, Fe, Si, Mg, Cu, Ni, Zn;</p> <p>For grade GI-00 (99,999% mass) – Al, Fe, Si, Mg, Cu, Ni, Zn, Mn, Bi, Cd, Sn, Pb, Cr, P, S, Se, Te, Ag, In, Co.</p>
14.	<b>Tantalum</b> Ingots, strips, bars, wire, pipes	<p>Tantalum content 99,67 % mass.</p> <p>Impurities content % mass max: Nb-0,25, C-0,01, O<sub>2</sub>-0,01, N<sub>2</sub>-0,005, H<sub>2</sub>-0,001, Fe-0,005, Si-0,003, W+Mo-0,015, Ti-0,001, , Al-0,001, Ca-0,001, Cr-0,0006, Mn-0,0003, Ni-0,002, Cu-0,0006, Zr-0,005, Sn-0,0005.</p> <p>Round ingots: diameter 80-120 mm, length 250-350mm</p> <p>Square ingots: thickness 8-12mm, width 100-160mm, length 250-350mm.</p> <p>Strips: thickness 0,1-10,0 mm, width 50 mm, length 300 mm min.</p> <p>Wire diameter 0,2 - 3,0 mm, length 3000 mm min.</p> <p>For the wire and stripes - O<sub>2</sub> content 0,015% mass, N<sub>2</sub> content 0,01% mass.</p> <p>Pipes: diameter Ø3,0-32 mm, wall thickness ≠0,06-4,0 mm, length 200 mm min.</p>
15.	<b>High-purity aluminium ingots</b>	<p>Al content – 99,999÷99,9999% mass.</p> <p>Impurities to be controlled: Li, B, Na, Mg, K, Ca, Ti, Cr, Mn, Fe, Co, Ni, Cu, Zn.</p>
16.	<b>Anhydrous chromium(III) chloride (chromic chloride) powder</b>	<p>Chromic chloride content 95% mass min.</p> <p>To be controlled by chemical titration method.</p>
17.	<b>Hafnium oxychloride</b>	<p>Hafnium oxychloride content 99,6%</p> <p>Impurities content % mass max: Al-0,03, Fe-0,005, Si-0,05, Mg-0,01, Ti-0,005, Zr-0,050.</p>
18.	<b>Nickel – Niobium alloy</b>	<p>Grade NiNb 1: Ni 40-60% mass, Al 3%, balance Nb;</p> <p>Grade NiNb-65: Ni 58-70% mass, Al 2%, balance Nb.</p>
19.	<b>Niobium – Aluminium alloy</b>	<p>Al content 12% mass, balance Nb.</p> <p>Grade NbA-0 impurities % mass max: Fe-0,1-0,5, Si-0,1-0,3, C-0,03;</p> <p>Grade NbA-1 impurities % mass max: Fe-1,5, Si-0,5, S-0,015, P-0,09, C-0,05</p>
20.	<b>Magnesium – Neodymium alloy</b>	<p>Mg content 65-80% mass, Nd 20-35% mass.</p> <p>Impurities content % mass max: Ca-0,1, Cu-0,1, Fe-0,15, Si-0,04; Pb-0,0005%, Bi-0,0005, Sn-0,001, Sb-0,001.</p>
21.	<b>Nickel – Yttrium alloy</b>	<p>Y content 8-15% mass, Ni - balance.</p> <p>Impurities content % mass max: Fe-0,15, Cu-0,10, Si-0,05; Al-0,05%.</p>

22.	<b>Nickel – Tungsten alloy</b>	W content 8-15% mass, Ni - balance. Impurities content % mass max: Co-0,01, Fe-0,04, C-0,02; Al-0,01; Si-0,045%, P-0,007, S-0,003, Mn-0,001, Cu-0,001, Zn-0,001, As-0,001, Cd-0,0005, Sn-0,0005, Sb-0,005, Pb-0,0005, Bi-0,0001, Mo-0,3, H-0,001.
23.	<b>Magnesium-Zirconium-Neodymium alloy МЦп1Н3</b>	Zr content 0,4-1,1% mass., Nd 2,6-3,2% mass, Mg - balance. Impurities content % mass max: Be-0,001, Al-0,02, Si-0,02; Fe-0,01, Ni-0,004, Cu-0,01, Cl-0,005.
24.	<b>Ferroniobium</b> FeNb58	In accordance with GOST 16773-2003
25.	<b>Ferromolybdenum</b> FeMo52, FeMo55, FeMo58, FeMo60	In accordance with GOST 4759-91
26.	<b>Special steel and alloys billets</b>	Billets made of steel and Ni,Co -based alloys, produced on vacuum-induction furnaces. Alloys we offer: XH45Ю, XH 78Т, XH50ВМТЮБ, В3КЛ, В7КЛ. and others. Billets dimensions: diameter 65 - 100мм, length >400мм