GERMAN TRADING SERVICE
GMBH FOR RAW MATERIALS

纯铼金属 Pure rhenium metals

铼粉 Rhenium powder

外观：灰色金属粉末。
Appearance: Grey metal powder.

应用：各类铼部件的基料；各类高温合金的铼元素添加剂；铼元素标样。
Application: Used as base material for various rhenium parts, additives for superalloys, and standard sample of rhenium.

技术规格：4N级 Re≥99.99%（按差减法计算，气体元素除外）。
5N级 Re≥99.999%（按差减法计算，气体元素除外）。
Chemical specification:
4N Grade Re≥99.99%（calculated by subtraction method，except gas element).
5N Grade Re≥99.999%(calculated by subtraction method，except gas element).

粒度：-200目，客户有要求时提供激光粒度分布测试报告或电镜照片。
Particle size: -200 mesh, providing laser particle size distribution test report or SEM photos as per customer's request.

典型化学分析值 Typical chemical analysis

痕量杂质（%，≯） Trace impurities（%，max）					
元素 Element	4N级 4N Grade	5N级 5N Grade	元素 Element	4N级 4N Grade	5N级 5N Grade
Na	0.0010	0.0001	Ni	0.0001	0.00001
Mg	0.0001	0.00001	Cu	0.0001	0.00001
Al	0.0001	0.00001	Zn	0.0001	0.00001
Si	0.0005	0.00005	As	0.0001	0.00001
P	0.0001	0.00005	Zr	0.0001	0.00001
K	0.0010	0.0001	Mo	0.0010	0.0002
Ca	0.0005	0.00005	Cd	0.0001	0.00001
Ti	0.0001	0.00001	Sn	0.0001	0.00001
V	0.0001	0.00001	Sb	0.0001	0.00001
Cr	0.0001	0.00001	Ta	0.0001	0.00001
Mn	0.0001	0.00001	W	0.0010	0.0002
Fe	0.0005	0.00005	Pb	0.0001	0.00001
Co	0.0001	0.00001	Bi	0.0001	0.00001
Se	0.0001	0.00001	Tl	0.0001	0.00001
气体元素（%，≯）Gas element（%，max）					
O	0.1	0.06	C	0.005	0.002
N	0.003	0.003	H	0.002	0.002

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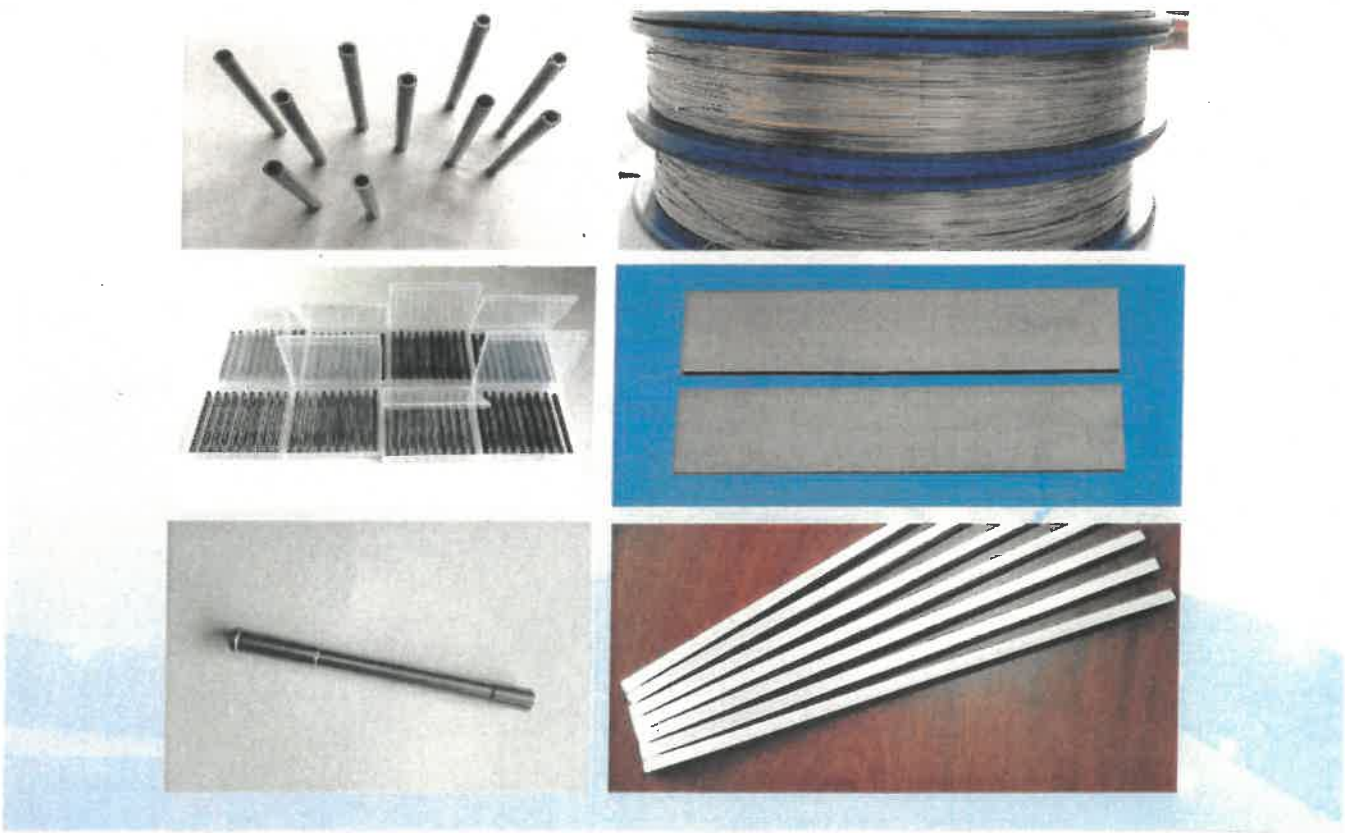
铼合金 Rhenium Alloys

钼铼合金 Molybdenum Rhenium Alloys

钼中加入4 1 %至 4 7.5 % 的铼而形成的一类合金，加入铼后合金延展性、焊接性能和成形性能可极大地提高，即使经过高温使用后，钼铼合金仍能保持良好的延展性。钼铼合金广泛应用于电子工业、核工业和航空航天工业。

Mo-Re alloy is Molybdenum Alloyed with 41% or 47.5% of Rhenium (nominal content of Rhenium is 50%), which has good ductility, weld ability, formability, and strength. Mo-Re alloy keeps high ductility even after used in high temperature. Mo-Re alloys are widely used for electronics, nuclear, and aerospace applications.

名称 Product Name	钼铼合金丝 Mo-Re Wire	钼铼合金杆/棒 Mo-Re Rod/Bar	钼铼合金片/板 Mo-Re Plate	钼铼合金靶 Mo-Re Target	钼铼合金管 Mo-Re Tube
主要牌号 Main Type	-	MoRe41%, MoRe44.5%, MoRe47.5%			
主要规格（mm） Main Spec.	0.1,0.2,0.25, 0.3,0.35,0.5	1~17	0.2 ×(10-500)× 1000	根据客户要求定制 Customized as per requirement	



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GMBH FOR RAW MATERIALS

纯铼金属 Pure rhenium metals

铼条 Rhenium bar

分类：根据使用要求不同，铼条按物理性能分为“高致密度铼条”和“中致密度铼条”，按化学成分分为“4N高纯99.99%”和“5N超高纯99.999%”两个规格。
Classification: according to the different requirements of use, rhenium bar according to the physical properties are divided into "high density rhenium bar" and "medium density rhenium bar", according to the chemical composition is divided into "high purity 99.99%" and "super pure 99.999%".

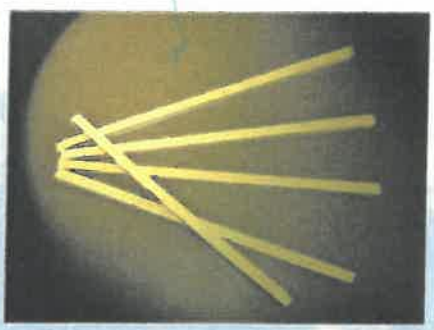
外观：长条或圆棒，中致密度铼条呈深灰色；高致密度铼条呈亮银色，有金属光泽。
Appearance: Grey or silver metallic square bar or round rod.

应用：中致密度铼条可用作超高温合金制造中的铼元素添加剂；高致密度铼条可用作制造棒材、丝材或高温结构件。
Application: Medium density rhenium bar can be used as additives for superalloys, and high density rhenium bar can be used for the manufacture of rods, wires or high temperature structural parts.

技术规格：4N级 Re≥99.99%（按差减法计算，气体元素除外）。
5N级 Re≥99.999%（按差减法计算，气体元素除外）。
中致密度铼条：密度约12g/cm^3.
高致密度铼条：密度约18.5g/cm^3.
Specification: 4N Grade Re≥99.99%(calculated by subtraction method，except gas element).
5N Grade Re≥99.999%(calculated by subtraction method，except gas element).
Medium density rhenium bar,density is about 12g/cc.
High density rhenium bar,density is about 18.5g/cc.

尺寸：方条（12~16）*（12~16）*（150~500）mm；圆条 D（10~20）*L（50~300）mm；可遵客户要求定制其它尺寸的铼条或铼圆棒产品。
Size:Square bar（12~16）*（12~16）*（150~500）mm,Round bar D（10~20）*L（50~300）mm.Can be customized as per requirement.





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纯铼金属 Pure rhenium metals

铼粒/锭 Rhenium pellet/ingot

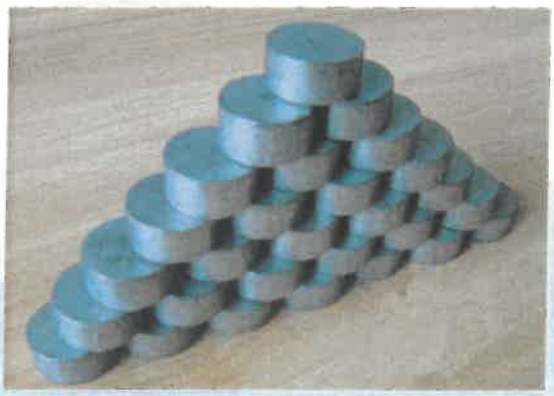
分类：根据使用要求不同，铼粒/锭按物理性能分为“高致密度铼粒/锭”和“中致密度铼粒/锭”,按化学成分分为“4N高纯99.99%”和“5N超高纯99.999%”两个规格。
Classification: according to the different requirements of use, rhenium pellet/ingot according to the physical properties is divided into "high density rhenium pellet/ingot" and "medium density rhenium pellet/ingot", according to the chemical composition is divided into "high purity 99.99%" and "ultra high purity 99.999%".

外观：圆柱或方块状，中致密度铼粒/锭呈深灰色；高致密度铼粒/锭呈亮银色，有金属光泽。
Appearance: Grey or silver metallic cylinder or square block.

应用：用作超高温合金制造中的铼元素添加剂。
Application: Used as an additive for manufacturing superalloys.

技术规格：4N级 Re≥99.99%（按差减法计算，气体元素除外）。
5N级 Re≥99.999%（按差减法计算，气体元素除外）。
中致密度铼粒/锭：密度约12g/cm^3。
高致密度铼粒/锭：密度约18.5g/cm^3。
Specification: 4N Grade Re≥99.99%(calculated by subtraction method,except gas element).
5N Grade Re≥99.999%(calculated by subtraction method,except gas element).
Medium density rhenium pellet/ingot,density is about 12g/cc.
High density rhenium pellet/ingot,density is about 18.5g/cc.

尺寸：直径D（12~20）*高度H（10~15）mm，单重30-50g，需方如对尺寸和单重如有特殊要求，双方协议订货。
Size:D（12~20）*H（10~15）mm,single weight 30-50g.Can be customized as per requirement.



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纯铼金属 Pure rhenium metals

其它纯铼制品及部件 Pure rhenium products & parts

品名 Product Name	规格和说明 Spec. & description	应用 Application
铼靶 Rhenium Target	形状、尺寸、密度接受定制， 纯度Re≥99.99%~99.999%。 Shape, size and density can be customized,purity 99.99%-99.999% min	镀膜溅射用 Sputtering targets
铼坩埚 Rhenium Crucible	形状、尺寸接受定制，密度≥18.8g/cm^3， 纯度Re≥99.99%。 Shape and size can be customized, density 18.8g/cc min, purity 99.99% min	用于稀土元素和宝石的单晶生长 Used for single crystal growth of rare earth element and gemstone.
纯铼加热器 Pure Rhenium Heater	内圈、外圈加热器 Inner and outer heatings	半导体和电子工业中作为MOCVD高温加热部件 Used as high-temperature heater for MOCVD in semi-conductor and electronic industry.