



宝鸡难熔金属开发公司

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NICKEL-BASE ALLOY PRODUCTS

● NICKEL-BASE ALLOY——Inconel

✧ Grade comparison table

	GB	UNS	SEW VDIUV	BS	AFNOR
Inconel 600	NS312	N06600	W.Nr.2.4816 (NiCr15Fe)	NA14	NC15FE
Inconel 601	NS313	N06601	W.Nr.2.4851 (NiCr23Fe)		NC23FeA
Inconel 625	NS336	N06625	W.Nr.2.4856 (NiCr22Mo9Nb)	NA21	NC 22 DNb

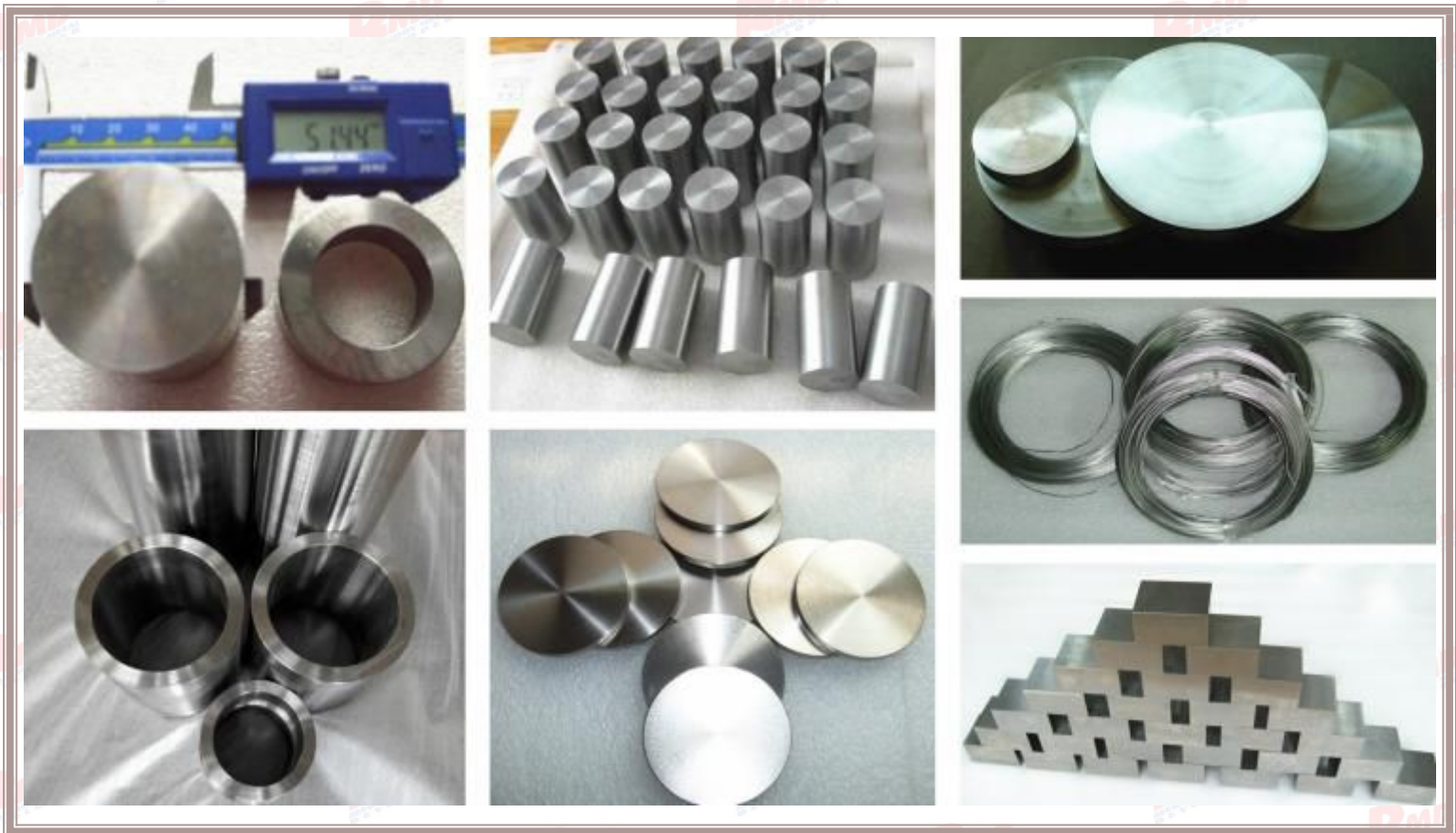
✧ Chemical Composition:

Grade	%	Ni	Cr	Fe	Mo	C	Nb	Mn	Si	Al	Cu	Ti	P	S	Co
Inconel 600	min	72	14	6											
	max		17	10		0.15		1.0	0.5		0.5		0.015	0.015	
Inconel 601	min	Balance	21	10						1.0					
	max		25	15		0.1		1.0	0.5	1.7	1.0		0.03	0.015	
Inconel 625	min	Balance	20		8		3.15								
	max		23	5	10	0.1	4.15	0.5	0.5	0.4		0.4	0.015	0.015	1.0

✧ Physical properties:

Grade	Density g/cm3	Melting point °C	Annealing treatment				Solution treatment			
			Tensile strength Rm N/mm2	Yield strength RP0.2 N/mm2	Elongation A5 %	Hardness HB	Tensile strength Rm N/mm2	Yield strength RP0.2 N/mm2	Elongation A5 %	Hardness HB
Inconel 600	8.4	1370-1425	550	240	30	≤195	500	180	35	≤185
Inconel 601	8.1	1320-1370	650	300	30	—	600	240	30	≤220
Inconel 625	8.4	1290-1350					760	345	30	≤220

✧ Products show:



✧ Properties:

Inconel 600

- Excellent corrosion resistance to reduction,oxidation and nitridation medium
- Good resistance to stress corrosion cracking,both in the room temperature and high temperature environment
- Good corrosion resistance to dry chlorine gas and hydrogen chloride gas
- With good mechanical properties in the sub-zero, room and high temperature environment
- With high creep rupture strength, recommended to be used in above 700°C working environment

Inconel 601

- Good resistance to oxidation at high temperature
- Excellent resistance to carbonizing
- Good resistance to oxidizing sulfurated atmosphere
- With good mechanical properties at both room temperature and high temperature
- Good resistance to stress corrosion cracking, for carbon content and size of the crystalline grain are strictly controlled,601 has high creep rupture strength, so suitable to be used in above 500°C environment

Inconel 625

- Excellent corrosion resistance to corrosive mediums in oxidation and reduction environment
- Excellent resistance to spot and crevice corrosion, stress corrosion cracking caused by chloride will not occur
- Splendid resistance to inorganic corrosion, such as nitric acid, phosphoric acid, vitriol, hydrochloric acid and the mixture of vitriol and hydrochloric acid etc
- Excellent resistance to the mixed solution of all kinds of inorganic acid
- With outstanding corrosion resistance in hydrochloric acid of various concentration when the temperature reach 40°C
- Good processability and weldability, free of welding crack sensitivity
- With pressure vessel manufacturing certification for wall temperature -196~450°C vessels
- Certified by National Association of Corrosion Engineers(NACE), standard certification(MR-01-75), conforming to highest standard VII acid gases environmental conditions

✧ Range of use:

Inconel 600

- Thermowell used in erosion atmosphere
- Polyethylene monomer production: resisting to chlorine, hydrogen chloride, oxidation and carbonization corrosion
- Uranium is oxidized to be hexafluoride: resistant to hydrogen fluoride
- Used in the corrosive alkali metals production and using field, especially the environment which sulfide is used in
- Manufacturing titanium dioxide by chlorine
- Production of Organic or inorganic chloride and fluoride: resistant to chlorine and fluorine corrosion
- Nuclear reactor
- Retort and parts in thermal treatment furnace, especially in carbonized and nitrided atmosphere
- Petrochemical production catalytic regenerator, which used in above 700°C environment, recommended to use alloy 600 to gain longer service life

Inconel 601

- Trays, basket, and clamping apparatus used in heat-treatment plant
- Steel wire strands of annealing and radiant tube, high velocity gas burner, Wire mesh belt in industrial furnace
- Isolation tank in reforming of ammonia, and Catalytic support grid in the production of nitric acid
- Parts for exhaust system
- Combustor of solid waste Incinerator
- Pipe support and ash handling parts

Inconel 625

- Parts used in organic chemical process technology, containing chlorine, especially in the environment which acid chloride catalyst is used
- Digester and bleached stock chest, which used in manufacturing pulp and paper
- Absorption tower, reheater, the flue gas inlet baffle, ventilator (humid), stirrer, deflector and gas flue etc, used in the flue gas desulfurization system/(FGD systems).
- Used for manufacturing equipments and parts, which used in Acidic gas environment
- Acetic acid and acetic anhydride response generator
- Sulfuric acid condenser