



宝鸡难熔金属开发公司

Bao Ji Refractory Metal Developer Co.,Ltd

Office Address:F10 Ronking International Mansion,No.61 GaoXin Road,Bao Ji Shaan Xi ,China

Tel:0086-917 3315889 Fax:0086-917 3313889

NICKEL-BASE ALLOY PRODUCTS

● NICKEL-BASE ALLOY——Hastelloy

✧ Grade comparison table:

	GB	UNS	SEW VDIUV	BS	AFNOR
Hastelloy B	Ns321	N10001			
Hastelloy B-2	NS322	N10665	W.Nr.2.4617;NiMo28		NiMo28
Hastelloy C	NS333				
Hastelloy C-4	NS335	N06455	W.Nr.2.4610		
Hastelloy C-22		N06022	W.Nr.2.4602		
Hastelloy C-276	NS334	N10276	W.Nr.2.4819;NiMo16Cr15W	NC17D	

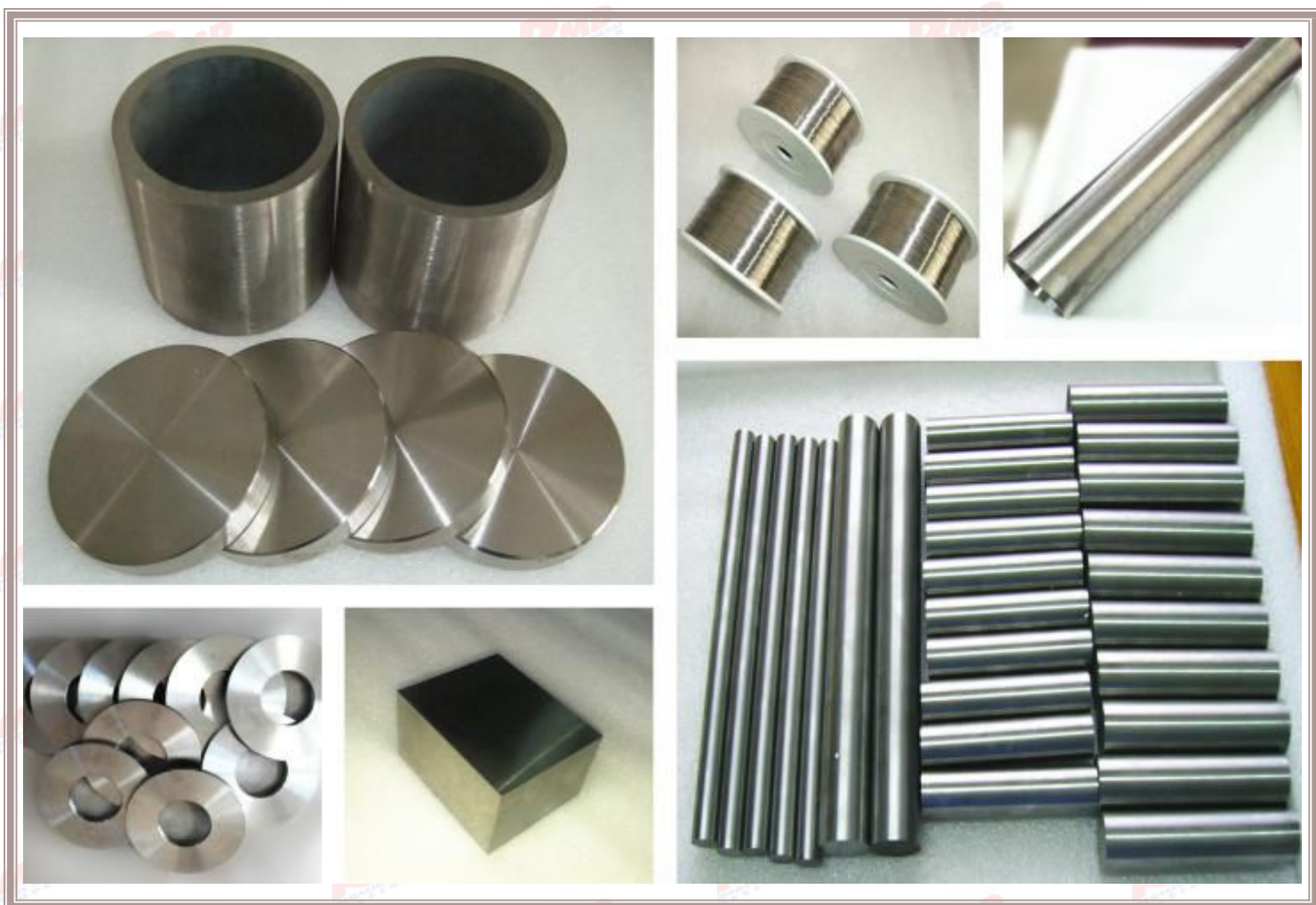
✧ Chemical Composition:

Grade	%	Ni	Mo	Fe	Cr	Co	C	Mn	V	Si	P	S	W	Ti
Hastelloy B	min	balance	26.0	4					0.20					
	max		30.0	6	1.00	2.5	0.050	1.0	0.40	1.00	0.04	0.03		
Hastelloy B-2	min	balance	26.0						0.20					
	max		30.0	2	1.00	1.0	0.020	1.0	0.40	0.10	0.04	0.03		
Hastelloy C	min	balance	15.0	4	14.5								3.0	
	max		17.0	7	16.5	2.5	0.080	1.0	0.35	1.00	0.04	0.03	4.5	
Hastelloy C-4	min	balance	14.0		14.0									
	max		18.0	3	18.0	2.0	0.015	1.0		0.08	0.04	0.03		0.7
Hastelloy C-22	min	balance	12.5	2	20.0								2.5	
	max		14.5	6	22.5	2.5	0.015	0.5	0.35	0.08	0.02	0.02	3.5	
Hastelloy C-276	min	balance	15.0	4	14.5								3.0	
	max		17.0	7	16.5	2.5	0.01	1.0	0.35	0.08	0.04	0.03	4.5	

✧ **Physical properties:**

Grade	Density g/cm ³	Melting point °C	Tensile strength Rm N/mm ²	Yield strength RP0.2 N/mm ²	Elongation A5 %
Hastelloy B	9.24	1330-1380	690	310	40
Hastelloy B-2	9.24	1330-1380	690	310	40
Hastelloy C	8.94	1350	690	315	30
Hastelloy C-4	8.90	1325-1370	650	280	40
Hastelloy C-22	8.90	1325-1370	690	283	40
Hastelloy C-276	8.90	1325-1370	690	283	40

✧ **Products show:**



✧ Properties:

Hastelloy B & Hastelloy B-2

- Control iron and chromium in the lowest concentration to prevent formation of β phase Ni_4Mo
- Excellent corrosion resistance in re-oxidizing environment
- Good resistance to chloride ion stress corrosion cracking (SCC)
- Excellent ability to endure various organic acids
- Excellent medium-concentration sulfuric acid resistance and non-oxidizing acids corrosive

Hastelloy C

- Very good resistance against oxidizing and Medium reductive.
- Excellent corrosion resistance characteristics in the chemical process medium
- Excellent resistance to stress corrosion cracking and excellent local corrosion resistance

Hastelloy C-4

- Excellent thermal stability and toughness in high temperature condition
- Stress corrosion cracking and oxidation atmosphere has a good resistance at high temperature condition
- Suitable for all types of thermal mineral acid and medium containing chloride, acetic acid, acetic anhydride, sea water and saline solution and other corrosive substances

Hastelloy C-22

- Almighty-Nickel-chromium-molybdenum-tungsten alloy ,Have overall better corrosion resistance than other existing Nickel-chromium-molybdenum alloy
- Excellent antioxidant water, including wet chlorine, nitric acid or oxidizing acids containing chloride ions in mixed acids
- Good resistance to pitting, crevice corrosion and stress corrosion dehiscence ability
- Excellent ability of reducing and oxidizing environments in the course of resistance
- Resistance to grain boundary precipitates formed in the weld heat-affected zone, to adapt it to many types of chemical processes used in welded condition
- Excellent resistance to various chemical environments.including strong oxidizing substances, such as ferric chloride, copper chloride, chlorine, thermal pollution solution (organic and inorganic), formic acid, acetic acid, acetic anhydride, sea water and salt solutions

Hastelloy C-276

- Excellent corrosion resistance to most corrosive media in a State of oxidation and reduction
- Excellent resistance to pitting corrosion, crevice corrosion and stress corrosion cracking resistance

✧ **Range of use:**

Hastelloy B & Hastelloy B-2

—Widely used in chemical, petrochemical, energy and pollution control in the field, particularly in industries such as sulfuric acid, hydrochloric acid, phosphoric acid, acetic acid

Hastelloy C

—The nuclear power industry
—Container exchanger, plate cooler
—Acetic acid and acidic products of reactor

—Chemical industry, petroleum industry
—High-temperature structural parts

Hastelloy C-4

—Wet chlorine, sodium hypochlorite, hydrochloric acid, chlorine plant

Hastelloy C-22

—Components used in contact with organic compounds containing chlorides and catalytic systems
—Widely used in chemical and petrochemical field

—Flue gas cleaning systems
—Burning cleaner system
—Plate-type heat exchanger
—Sulfur dioxide for cooling tower
—Sulphonation system-tube type heat exchanger
—Suitable for high temperature, mixed with impurities of organic acids and inorganic acids (formic acid and acetic acid), seawater corrosion environments

—HF melting pot cleaner
—Acid washing system
—Selective filtering system

Hastelloy C-276

—Components used in contact with organic compounds containing chlorides and catalytic systems
—Applied to high temperature, inorganic acids and organic acids mixed with impurities (such as formic acid and acetic acid), seawater corrosion environments
—The pulp and paper industry, such as cooking solutions and bleach containers
—FGD scrubber systems ,Heater ,Moisture fan,etc
—Equipment and components in sour gas environment
—Acetic acid and acidic products of reactor
—Methylene diphenyl isocyanate (MDI)
—Not pure phosphoric acid production and processing

—Sulfuric acid condenser