

# Green Harbor

- Special stainless steel | Titanium and nickel based alloy materials | High end stainless steel pipes
- Provide stainless steel raw material processing and distribution services

ONE STOP METAL MATERIAL SERVICE PROVIDER



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# GREEN HARBOR Company Profile ONE STOP METAL MATERIAL SERVICE PROVIDER



Jiangsu Green Harbor Stainless Steel Co., Ltd. is an enterprise specializing in the manufacture of special stainless steel, titanium materials, nickel-based alloy materials, and high-end stainless steel pipes. We provide stainless steel raw material processing and distribution services.

Since its establishment, Jiangsu Green Harbor has focused on high-end stainless steel materials, nickel-based alloys, titanium materials, and high-end stainless steel pipe manufacturing, serving as a comprehensive service provider and processing enterprise. We have established long-term cooperation with major domestic steel mills such as Baowu Group, Tsingshan Holding Group, Jiangsu Delong Nickel Industry, Zhangpu, JISCO, TISCO, etc. At the same time, we have developed import and export trade with well-known international steel groups such as ATI in the United States, HAYNES in the United States, Outokumpu in Finland, VDM in Germany, Yakin in Japan, and Nippon Steel in

Japan. Our main materials include austenitic 304, 316L, 310S, 316Ti, super austenitic N08926, N08367, 904L, duplex steel 2205, 2507, precipitation hardening stainless steel 15-5PH, 17-4PH, 17-7PH, Hastelloy C-22, Hastelloy C-276, Monel alloy Monel 400, Monel 403, Monel 404, Monel 405, Monel 500, Monel 501, 600 series, titanium materials, etc.

Our office area exceeds 1,000 square meters, and the factory area exceeds 15,000 square meters. We have ample stock inventory, with tens of thousands of tons of titanium and titanium alloys, nickel-based alloys, duplex steel, super stainless steel, and stainless steel pipes in reserve throughout the year. The company is equipped with a variety of stainless steel processing equipment, capable of performing flat bar and strip cutting, sheet metal bending, water jet and plasma laser cutting, oil grinding, rolling, embossing, and stamping processing on stainless steel materials.

Our company's certification is recognized by the International Certification Network (IQNet) and the China National Accreditation Service for Conformity Assessment (CNAS). We implement standardized management in accordance with the requirements of the quality management system, environmental management system, and occupational health management system standards.

**Company Management Policy:** Strive for perfection, rigorous and efficient, quick execution, centered on market and customer needs, meticulously performing all tasks, pursuing excellence with a meticulous attitude. Green Harbor is willing to work hand in hand with all sectors to develop and create brilliance together.



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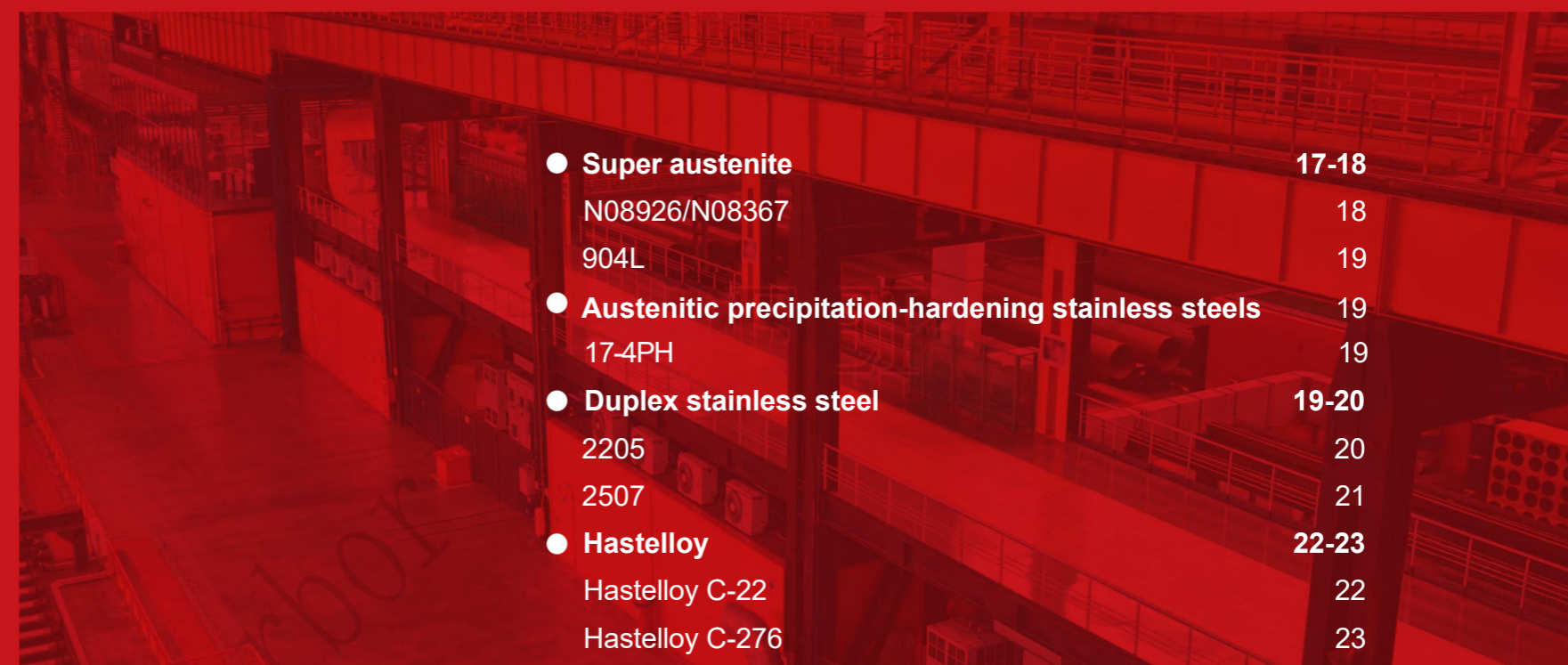
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# GREEN HARBOR MACHINING CENTERS

## Striped leveling platform

Precision cutting platform longitudinal cutting equipment. The maximum winding weight is 32T, and the inner diameter of the coil is 508mm~610mm. Capable of attaching paper and film. It has advantages such as high processing accuracy, elimination of raw material applications, and scratch-free protection of the board surface.



## Bending forming platform

Has advanced large-scale bending processing equipment—600T x 7m CNC bending machine (bending machine—pressure 600 tons, bending length of 7 meters) mainly for some small bending machine can not meet the demand for large sheet metal parts for large-scale bending and processing services, and another 4m/6m single CNC shear bending machine, CNC lathe and other equipment.



## Welding assembly platform

With years of strict standardized management, now has a professional assembly welding parts processing team, "sincerity" and "letter" as the basic business philosophy, to user satisfaction as the purpose of the service, dedicated to assembly welding parts processing project. Professional equipment, experienced technicians, is our guarantee to customers.

## Cutting and cutting platform

Plasma cutting, water cutting, laser cutting, flame cutting, sawing machine and other equipment for cutting down platform. While broadening the processing scope, extending the processing field and improving the processing precision, we realize nesting processing, multi-means cutting and intensive production to meet the diversified processing needs of customers, comprehensively enhance the production and processing capacity, and help customers save costs.

## Strined processing

The slitting process is used to slit raw metal coil material; Slitting processed strip products are mainly used in electrical industry, automobile, stamping parts; We can process a variety of cold rolled raw materials and precision strips to meet the diverse needs of our customers. Slitter processing is widely used in automobile, agricultural vehicles, containers, home appliances, building materials and other metal sheet processing industries,



## Kaiping Processing

Precision cutting platform cross-cutting equipment is introduced from Italy, South Korea, Taiwan and other countries or regions. The maximum winding weight is 40T, and it has the function of attaching paper and film. The meter shear equipment for medium and thick plates can eliminate about 65% of plate shape defects (such as edgewise, abdominal waves, warping, horizontal bends, etc.). Stacking function: air cushion pallet, flap rack stacking, clapping function. It has the advantages of high processing accuracy, elimination of raw material applications, board protection and so on.



## Precision steel strip

### PRODUCTION EQUIPMENT: U.S. SENGEMEIER ZR33-18 TWENTY-STICK PRECISION ROLLING MILL

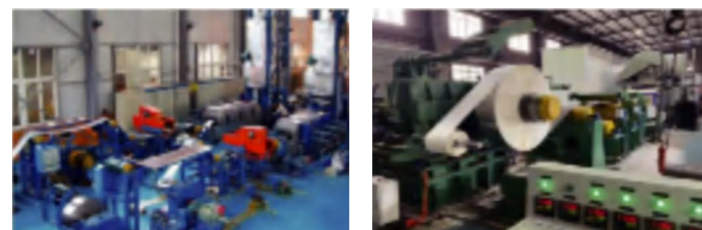
Imported from the U.S.A, Sengemeier twenty-roll precision rolling mill, the first 450 precision rolling mill in china-Fully automatic plate control, for stainless steel strip plate shape, thickness and precision can provide the greatest-guarantee. One of the production of pot material has been able to stably replace the use of imported materials, in theSouth China market has won a good reputation.

A new 650 U.5.Sengemeier twenty-roll precision rolling mill has been officially putinto production.



### CONTINUOUS BRIGHT NNEALING FURNACE

Full-line digital control system, advanced sealing design of import and export, electric heating, purehydrogen protection, high-speed convection cooling technology, to ensure stable annealing performance and



### CLEANING UNIT

Adopting advanced production technology, alkaline washing, brushing, deionized water rinsing andbrushing are combined to ensure the excellent quality ofthe material surface.



### PRODUCTION EQUIPMENT: GERMANY UNGERER COMPANY TENSION

The production line introduced from Germany ungerer company is equipped with automatic control systemof plate shape, the production process realizes full digital control and management, which ensures the

### PRODUCTION EQUIPMENT:TAIWAN PRECISION CUTTING MACHINE

Taiwan introduced longitudinal shear production line, with stainless steel belt in the operationof the longitudinal cutting function, shear thickness of 0.05mm~0.5mm, width of 9mm-440mmshear width tolerance of up to 0.1mm.and add a set of 650 precision longitudinal shear unit.

## Oil Grinding and prawing

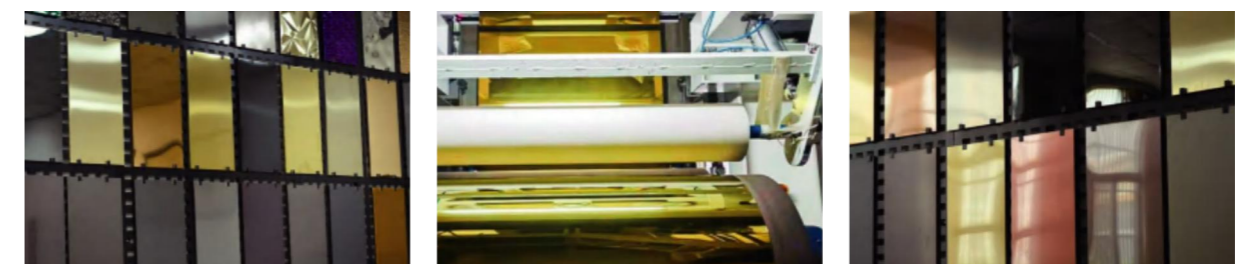
Single sheet plate grinding equipment was introduced from Italy and Japan respectively. The maximum process- ing widthis 4200mm, the maximum procesing length is 12000mm, the thickness processing range is 0.3-200mm, which is the highestgrinding thickness equipment in China.In the medium-thickness plate grinding to ensure that the plate surface grindinguniformity, no dead ends, to eliminate dust, particle pollution.The quality of the product can fully reach the same effect ofprocessing with cold rolled surface as the base material.

## Mirror processing

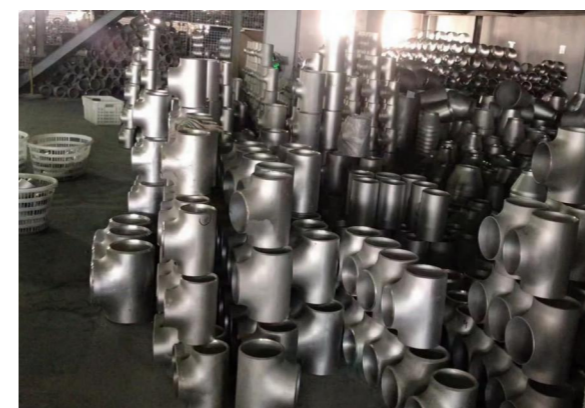
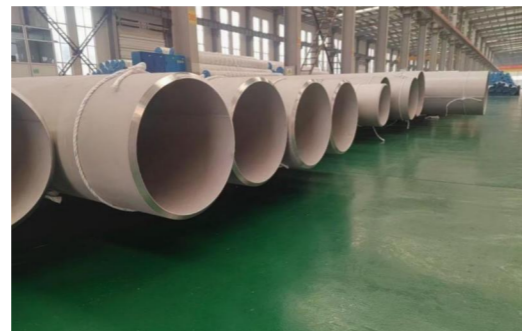
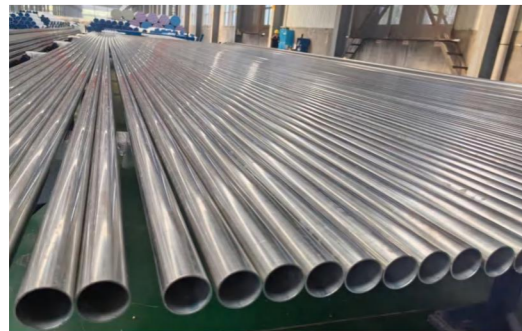
Mirror polishing is divided into mechanical miror polishing and chemical solution mirror polishing. Mechanical mirropolishing is a process of grinding (coarse grinding, fine grinding) and polishing on metal materials to achieve a flat, brightmirror-like surface, Chemical solution mirror polishing is the use of chemical solutions to soak, remove the surface of theoxidized skin to achieve a bright effect.



## Surface color plating



# GREEN HARBOR STORAGE CENTER



# COMPANY QUALIFICATION

## Cooperative steel plant

We have established long-term cooperation with large steel mills such as Baowu Group, Qingshan Holdings Group, Jiangsu Delong Nickel industry, Zhangpu, and Jlugang in China. At the same time we have also developed import trade with well-known foreign steel groups such as ATI in the United States, HAYNES in the United States, Outlook in Finland, yDM in Germany, Yakin in Japan, and Nippon Steel in Japan.



## Company qualification

Our company has been rated as a trustworthy enterprise that values service, contracts, and quality for three consecutive years, with a credit rating of 3A and awarded the ISO9001 certificate.



## Certification Certificate

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# ALOY PORTFOLIO PRODUCT SERIES



- Bars: Black skinned round steel, turned round steel, hot-rolled round steel
- Wire (wire): hot-rolled wire, cold-drawn wire.
- Plate: hot-rolled plate, cold-drawn plate.
- Strip: soft state, semi hard state, hard state.
- Pipe materials: seamless pipe, welded pipe, capillary pipe, coil pipe.
- Pipe fittings: control pipe fittings, forged pipe fittings.
- Flange: forged, cast, cut, rolled.



# AUSTENITE PRODUCT INTRODUCTION



## 304

304 stainless steel is the most widely used type of chromium nickel stainless steel. As a widely used steel, it has good corrosion resistance, heat resistance, low-temperature strength, and mechanical properties; Good thermal workability such as stamping and bending, without heat treatment hardening phenomenon (service temperature -196 C~800 °C) Corrosion resistance in the atmosphere. If it is an industrial atmosphere or heavily polluted area, timely cleaning is necessary to avoid corrosion. Suitable for food processing, storage, and transport.

tation. It has good processing performance and weldability, Plate heat exchangers, corrugated pipes, household items (category 1 and 2 tableware cabinets, indoor pipelines, water heaters, boilers, bathtubs), automotive accessories (windshield wipers, mufflers molded products), medical appliances, building materials, chemicals, food industry, agriculture, ship components, etc. The 304 stainless steel with strict content control can also be referred to as food grade 304 stainless steel.

### Specifications

Grade	UNS	W.Nr
304	S30400	1.4301

### Mechanical properties:

(Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
515-1035	205	40

### Chemical Composition

304	C	Mn	P	S	Si	Cr	Ni
Requirement, %	≤0.08	≤2.00	≤0.045	≤0.030	≤1.00	18.0-20.0	8.0-11.0



## 316L

### Corrosion Resistance

Due to the addition of Mo, its corrosion resistance, atmospheric corrosion resistance, and high-temperature strength are particularly good, making it suitable for use under harsh conditions; Excellent work hardening (nonmagnetic); Excellent high-temperature strength; Solid solution state without magnetism; Cold rolled products have good glossiness and beauty in appearance; Compared to 304 stainless steel, the price is higher.

### Application

Application fields: equipment used in seawater, chemical, dye, papermaking, oxalic acid, fertilizer and other production equipment; Photography, food industry, coastal facilities, ropes, CD poles, bolts, nuts.



The areas with weak corrosion resistance in the passivation film on the surface of 316L stainless steel plate form pitting reactions due to self-excitation reactions, forming small pores, and with chloride ions approaching, forming a strong corrosive solution accelerating the rate of corrosion reactions. There is also intergranular corrosion cracking inside stainless steel, all of which have a destructive effect on the passivation film on the surface of stainless steel plates. Therefore, regular cleaning and maintenance must be carried out on the surface of stainless steel to maintain its luxurious appearance and extend its service life.

### Specifications

Grade	UNS	W.Nr
316L	S31600	1.4401

### Mechanical properties:

(Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
620	310	40

### Chemical Composition

316	C	Si	Mn	P	S	Ni	Cr	Mo
Requirement, %	≤0.08	≤2.00	≤2.00	≤0.035	≤0.030	10.0-14.0	16.0-18.0	2.00-3.00

## 316Ti

### Corrosion Resistance

AISI 316Ti steel is an austenitic stainless steel grade containing molybdenum, which has better corrosion resistance compared to the 316L grade by adding the element titanium. The characteristic of this steel is its good ductility and plasticity, which can be used in most acid and salt environments containing sulfuroxide and phosphoric acid at low temperatures.

316Ti is an austenitic stainless steel; it is a derivative of 316 stainless steel with titanium stability. In theory, 316Ti is type 316 and 321 is type 304. After heating within the temperature range of 425-815 °C, titanium is added to 316 stainless steel to enhance its resistance to intergranular corrosion.

### Application

316Ti alloy is widely used in marine industry, chemical processing, and medical industry due to its excellent strength and good corrosion resistance. SUS 316Ti is used for building shells, doors, windows and armatures, medical implants, surgical

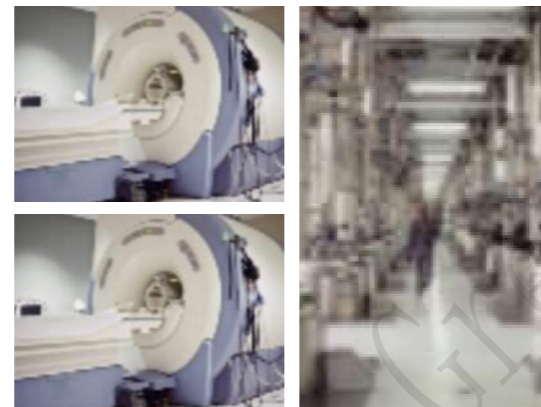
implants, containers and pipelines for chemical tanks, warehouses and land transportation for chemicals, food and beverages, pharmaceuticals, synthetic fibers, paper and textile mills, and pressure vessels.

### Specifications

Grade	UNS	W.Nr
316Ti	S31635	1.4571

### Mechanical properties: (Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
515	205	40



### Chemical Composition

316Ti	C	N	P	S	Si	Mn	Cr	Ni	Mo	Ti
Requirement, %	≤0.08	≤1.00	≤0.035	≤0.020	≤1.00	≤2.00	16.0-18.0	10.0-14.0	2.00-3.00	5xC%-0.7

### Standards

Plates/Sheets Coils	Seamless Pipe Tube	Welded pipe	Round Rod	Flange
ASTM A213 BS EN 10216-5	ASTM A789 ASTM A790	ASTM A928	ASTM A276 ASTM A479	ASTM A182 F53

## 310S

### Corrosion Resistance

310S stainless steel is austenitic chromium nickel stainless steel with excellent oxidation resistance, corrosion resistance, and high temperature resistance. Due to the high percentage of chromium and nickel, it has much better creep strength and can continue to operate at high temperatures, with good high temperature resistance. Due to the high content of nickel (Ni) and chromium (Cr), it has good oxidation resistance, corrosion resistance, acid and alkali resistance and high temperature resistance. High temperature resistant steel pipes are specifically used for manufacturing electric furnace tubes and other occasions. After increasing the carbon content in austenitic stainless steel, its strength is improved due to its solid solution strengthening effect. The chemical composition characteristics of austenitic stainless steel are based on chromium and nickel, with the addition of elements such as molybdenum, tungsten, niobium, and titanium. Due to its face centered cubic structure, therefore, it has high strength and creep strength at high temperatures. The melting point is 1470 °C, and it begins to soften at 800 °C, with a continuous decrease in allowable stress.

### Specifications

Grade	UNS	W.Nr
310S	S31008	1.4845

### Mechanical properties: (Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
520	205	50



### Chemical Composition

310S	C	N	P	S	Si	Cr	Ni
Requirement, %	≤0.08	≤1.00	≤2.00	≤0.035	≤0.030	19.0-22.0	24.0-26.0

### Application

Stamping molds, fixtures, tools, gauges, paper cutters, auxiliary tools, etc.





# SUPER AUSTENITE PRODUCT INTRODUCTION

## N08926/N08367

8926 is in halide media and sulfur-containing hydrogen acidic environment with very high resistance to pitting and crevice corrosion, can effectively resist chloride ion stress corrosion, in oxidizing and reducing media also has good corrosion resistance, good stability, mechanical properties slightly better than 904L, can be used for -196 to 400 °C pressure vessel manufacturing



### Specifications

Grade	UNS	W.Nr
25-6Mo	N08926	1.4529

### Mechanical properties: (Minimum value at 20°C)

Tensile Strength σb/MPa	Yield Strength σb0.2/MPa	Elongation: σ5/%
650	295	35

### Physical property

Density	Melting point	Magnetism
8.24g/cm <sup>3</sup>	1320-1400°C	

### Chemical Composition

316Ti	C	N	P	S	Si	Mn	Cr	Ni	Mo	Ti
Requirement,%	≤0.08	≤1.00	≤0.035	≤0.020	≤1.00	≤2.00	16.0-18.0	10.0-14.0	2.00-3.00	5xC%-0.7

### Application

Flue gas desulphurization units, evaporators, heat exchangers, filters and mixers for phosphoric acid production, sulphuric acid conveying units, condensers, fire extinguishing systems, seawater filtration systems, hydraulic and recharge piping systems in the offshore industry, pulp systems, salt evaporation condensers, contaminated cooling water piping systems in power plants, reverse osmosis seawater desalination units, corrosive chemical transportation and storage tanks, haloacid-catalyzed organics production equipment, and so on.



## 904L

904L is a highly alloyed austenitic stainless steel with very low carbon content. Alloy 904L, like other commonly used CrNi austenitic steels, has good resistance to pitting and crevice corrosion, high resistance to stress corrosion rupture, good resistance to intergranular corrosion, good machinability and weldability. The alloy is used in the manufacture of petroleum and petrochemical equipment such as reactors in petrochemical plants, storage and transportation equipment for sulfuric acid, flue gas desulfurization units in power plants, scrubbers and fans in organic acid treatment systems.

### Specifications

Grade	UNS	W.Nr
904L	NO08904	1.4539

### Mechanical properties:

(Minimum value at 20°C)

Tensile Strength σb/MPa	Yield Strength σb0.2/MPa	Elongation: σ5/%
490	215	35

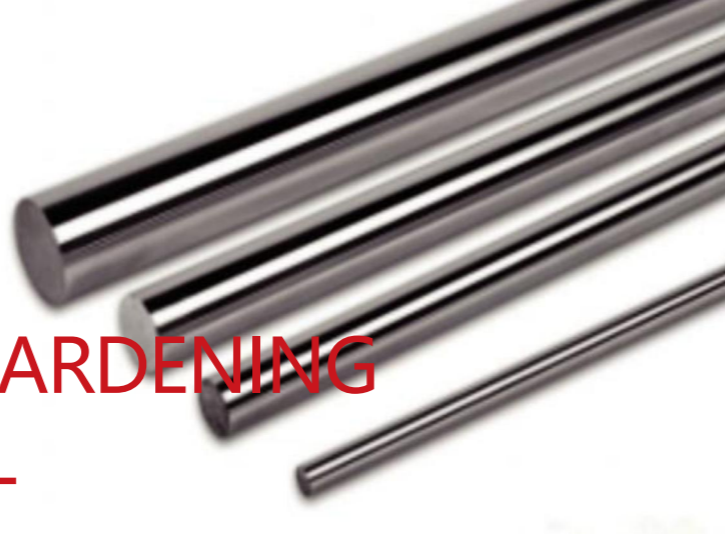
### Chemical Composition

Grade	%	Ni	Cr	Mo	Cu	Fe	C	Mn	P	S
904L	Min	23	19	4	1	Bal.	0.02	2	0.03	0.015
	Max	28	21	5	2					

### Standards

Plates/Sheets Coils	Seamless Pipe Tube	Welded Pipe	Round Rod	Flange
ASTM A213 BS EN 10216-5	ASTM A789 ASTM A790	ASTM A928	ASTM A276 ASTM A479	ASTM A182 F53

# MARTENSITIC PRECIPITATION HARDENING STAINLESS STEEL



## 17-4PH

17 4PH stainless steel is a martensitic precipitation hardening stainless steel, equivalent to the Chinese brand: 0Cr17Ni4Cu4Nb17-4PH precipitation hardened steel grade with copper added. 17-4PH is used for manufacturing shaft and steam turbine

components. 17-4PH alloy is a precipitation, hardening, martensitic stainless steel. It is a precipitation,

hardening, martensitic stainless steel composed of copper, niobium/columbium. This grade has characteristics such as high strength, hardness (up to 300 C/572 °F), and corrosion resistance.

After heat treatment, the mechanical properties of the product are further improved, reaching a compressive strength of up to 1100-1300 mpa (160-190 ksi).

### Specifications

Grade	UNS	W.Nr
17-4PH	S17400	1.4512

### Mechanical properties:

(Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
1310	1180	10

### Chemical Composition

17-4PH	C	Mn	P	S	Si	Cr	Ni	Mo	Cu	Nb+Ta
Requirement, %	≤0.07	≤1.00	≤0.04	≤0.03	≤1.00	15.5-17.5	3.0-5.0	6.00-7.00	3.0-5.0	0.15-0.45

### Application

Offshore platforms, helidecks, other platforms, food industry, pulp and paper industry, aerospace (turbine blades), mechanical components, nuclear waste drums, etc.



# DUPLEX STAINLESS STEEL

## 2205

The yield strength of 2205 duplex stainless steel is more than twice that of ordinary austenitic stainless steel, which allows designers to reduce weight when designing products, giving this alloy a price advantage over 316/317L. This alloy is particularly suitable for the temperature range of -50° F/+600° F. Applications beyond this temperature range can also consider this alloy, but there are some limitations, especially when applied to welded structures.

### Specifications

Grade	UNS	W.Nr
2205	531803	1.4462

### Mechanical properties:

(Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
620	450	10

### Chemical Composition

2205	C	N	P	S	Si	Mn	Cr	Ni	
Requirement, %	≤0.08	≤1.00	≤2.00	≤0.035	≤0.030	≤2.00	19.0-22.0	24.0-26.0	2.5-3.50

### CORROSION RESISTANCE

#### UNIFORM CORROSION

Due to the chromium content (22.96), molybdenum content (3.96), and nitrogen content (0.18%), the corrosion resistance of 2205 is superior to 316L and 317L in most environments.

#### LOCAL CORROSION RESISTANCE

The content of chromium, molybdenum, and nitrogen in 2205 duplex stainless steel makes it highly resistant to point corrosion and crevice corrosion in oxidizing and acidic solutions.

#### STRESS CORROSION RESISTANCE

The dual phase microstructure of stainless steel helps to improve its resistance to stress corrosion cracking. Austenitic stainless steel can undergo chloride stress corrosion at a certain temperature, stress, oxygen, and chloride presence. Due to the difficulty in controlling these conditions, the use of 304L, 316L, and 317L is limited in this regard.

#### CORROSION FATIGUE RESISTANCE

The high strength and corrosion resistance of 2205 duplex stainless steel make it highly resistant to corrosion fatigue. Processing equipment is susceptible to corrosive environments and loading cycles, and the characteristics of 2205 are very suitable for such applications.

### Application

Pressure vessels, high-pressure storage tanks, high-pressure pipelines, heat exchangers (chemical processing industry). Oil and gas pipelines, heat exchanger fittings. Sewage treatment system. Classifiers, bleaching equipment, storage and processing systems for the pulp and paper industry. Rotary shafts, press rollers, blades, impellers, etc. in high-strength and corrosion-resistant environments. Cargo box of a ship or truck. Food processing equipment.



## 2507

### Corrosion Resistance

#### 1. CORROSION RESISTANCE

The high chromium and molybdenum content of SAF 2507 gives it strong resistance to overall corrosion of organic acids such as formic acid and acetic acid. SAF2507 alloy also has strong corrosion resistance to inorganic acids especially those containing chlorides. SAF2507 can be used in dilute hydrochloric acid environments with strong resistance to spot damage and crack corrosion.

#### 2. INTERGRANULAR CORROSION

The lower carbon content of SAF 2507 greatly reduces the risk of carbide precipitation in the intergranular space.

#### 3. STRESS CORROSION CRACKING

The compound structure of SAF 2507 gives it strong resistance to stress corrosion

cracking. Cracks are almost inevitable in construction and other aspects, making stainless steel more susceptible to corrosion in chloride environments, SAF 2507 has strong resistance to crack corrosion. The equivalent corrosion curve of SAF 2507 in sulfuric acid containing 2000ppm chloride ions is 0.1 mm/year; The equal corrosion curve in hydrochloric acid is 0.1mm/year.

### Application

2507 stainless steel is used in the petroleum and natural gas industries; Offshore stone breaking oil platforms (heat exchanger-pipes, water treatment and supply systems, fire protection systems, sprinkler systems, water stabilization systems) Petro-chemical equipment; Desalination (desalination) equipment (and high-pressure pipes and seawater pipes in the equipment); Mechanical and structural components that require both high strength and high corrosion resistance; fuel (waste) gas purification equipment.

2507 is a ferritic austenitic (duplex) stainless steel that combines the most beneficial properties of many ferritic and austenitic steels. Due to its high chromium and molybdenum content, the steel has excellent resistance to spot corrosion, crevice corrosion, and uniform corrosion. The dual phase microstructure ensures that the steel has high resistance to stress corrosion cracking and high mechanical strength.



### Specifications

Grade	UNS	W.Nr
2507	S32750	1.4410

### Mechanical properties:

(Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
800	550	15

### Chemical Composition

2205	C	Si	P	S	Mn	Cr	Ni	Mo	N
Requirement, %	≤0.03	≤0.80	≤0.035	≤0.02	≤12	24.0-26.0	6.00-8.00	3.00-5.00	0.24-0.32

# HASTELLOY ALLOY

## Hastelloy C-22

Hastelloy C-22, by virtue of the content of Cr, Mo, and W and the control of Fe content, the alloy exhibits resistance to corrosion by both oxidizing and reducing acids, as well as resistance to the inclusion of mixed acids. The alloy is particularly well suited to resist pitting and crevice corrosion in acidic halide environments. Applications include chemical, pollution control, flue gas desulfurization, waste incineration pulp and paper.



### Mechanical properties: (Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
690	283	40

### Physical constants

Density, g/cm <sup>3</sup>	Melting Range, °C
8.61	

### Chemical Composition

Grade	%	Ni	C	Mn	Fe	Cr	Co	W	V	P	S	Mo
904L	Min	Bal.			2	20		2.5				125
	Max		0.015	0.500	6	22.5	2.5	3.5	0.35	0.02	0.02	145

### Application

Hastelloy C22 alloy has been widely used in the chemical and petrochemical fields, such as in components and catalytic systems that come into contact with chloride containing organic compounds. This material is particularly suitable for use in high-temperature, mixed inorganic and organic acids (such as formic acid and acetic acid), and seawater corrosive environments. Other application areas; acetic acid/acetic anhydride, acid

leaching, cellophane manufacturing, chlorination systems, complex mixed acids, rollers for electrogalvanizing tanks, expansion corrugated pipes, flue gas cleaning systems, geothermal wells, hydrogen fluoride furnace cleaners, incineration cleaning systems, nuclear fuel regeneration, insecticide production, phosphoric acid production, pickling systems, plate heat exchangers, selective filtration systems, sulfur dioxide cooling towers, sulfonation systems Tubular heat exchangers welding valves.



## Hastelloy C-276

### Corrosion Resistance

Hastelloy C-276 alloy is suitable for a variety of chemical process industries containing oxidizing and reducing media, the high molybdenum and chromium content makes the alloy resistant to chloride ions, tungsten further improves its corrosion resistance. C-276 is one of only a few materials that can resist the corrosion of moist chlorine gas, hypochlorite, and chlorine dioxide solutions, and the alloy has a significant corrosion resistance to high concentrations of chlorinated salts (e.g., ferric chloride and copper chloride). The alloy has significant corrosion resistance to high concentrations of chlorinated salt solutions (e.g., ferric chloride and copper chloride).

### Application

Hastelloy C-276 alloy has been widely used in the chemical and petrochemical fields, such as in components and catalytic systems that come into contact with chloride-containing inorganic compounds. This material is particularly suitable for use in high-temperature, mixed inorganic and organic acids (such as formic acid and acetic acid), and seawater corrosive environments. Hastelloy C-276 other application areas:

1. Pulp and paper industry, such as boil-off and bleaching vessels;
2. Scrubber towers, reheaters, wet vapor fans in FGD systems;
3. Equipment and components operating in acid gas environments;
4. Reactors for acetic acid and acidic products;
5. Sulfuric acid condensers;
6. methylenediphenyl isocyanate (MDI); and
7. production and processing of impure phosphoric acid

### Chemical Composition

Grade	%	Ni	C	Mn	Fe	W	Co	C	Mn	Si	V	P	S
Hastelloy C-276	Min	Bal.	14.5	15	4	3							
	Max		16.5	17	7	4.5	2.5	0.01	1	0.08	0.35	0.04	0.03

### Standards

Bar	Forging	Sheet/strip	Wire	Pipe
ASTM B574	ASTM B564	ASTM B575		ASTM B622 ASTM B619 ASTM B626

### Specifications

Grade	UNS	W.Nr
Hastelloy C-276	N10276	2.4819

### Mechanical properties: (Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
490	215	35

# NICKEL-BASED ALLOY PRODUCT INTRODUCTION

## Monel 400

Monel 400 (UNs N04400) is an alloy with high strength and toughness, as well as broad corrosion resistance. It is suitable for parts working in corrosive media such as seawater, hydrofluoric acid, sulfuric acid and alkali. It has a wide range of applications in important fields such as marine and chemical industries, such as pumps, valves, shafts, pipe fittings, fasteners, heat exchangers, and so on.

### Physical properties

Melting Range, °C	1300~1350
Density $d$ , g/cm <sup>3</sup>	8.8
Young's Modulus $E$ , GPa (20°C)	180
Shear Modulus $G$ , GPa (20°C)	65
COE $\alpha$ , 20~200°C, 10 <sup>-6</sup> /°C	15.2
Electrical resistivity $\rho$ , $\Omega \cdot m$ (20°C)	0.5x10 <sup>-6</sup>
Thermal conductivity, W/m.K (20°C)	22
Curie Temperature, °C	21~49

### Mechanical properties: (Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
450	200	40

### Chemical Composition

C	Mn	Si	S	Fe	Cu	Ni
0.3Max	0.3Max	0.50Max	0.024Max	2.5Max	28.0-34.0	63.0min

## Monel K-500

Monel K-500 has the same corrosion resistance as Monel K-400, but with higher hardness for mechanical strength. It has better heat and corrosion resistance and long-term organizational stability. Mainly used in the manufacture of aircraft engine operating temperature below 750 °C turbine blades and gas turbine blades; used in the manufacture of ships on the fasteners, springs; chemical equipment, pumps, valves, parts; papermaking equipment on the scraping blade and so on.

### Specifications

Grade	UNS	W.Nr
Monel K-500	N05500	2.4375

### Mechanical properties: (Minimum value at 20°C)

Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ /%
450	200	40

### Chemical Composition

Grade	%	Ni	Cu	Al	Ti	Fe	Mn	S	C	Si
Monel K-500	Min	63	27.0	2.30	0.35					
	Max		33.0	3.15	0.85	2.0	1.5	0.01	0.18	0.5

## Inconel 600

Inconel 600 (UNS N06600) alloy is a nickel-chromium-iron solid solution strengthened alloy with good resistance to corrosion and oxidation at high temperatures, excellent hot and cold processing and welding properties, satisfactory thermal strength and high plasticity below 700° C. The alloy is widely used in fatty acid processes in heaters, distillers, condensers; rolling furnace walls and trays in the heat treatment industry; rosin parts and trays in pulp manufacturing. The alloy is widely used in heaters, distillers and condensers in the fatty acid process; rolling furnace walls, furnace parts and trays in the heat treatment industry; rosin acid processing equipment in pulp manufacturing.

### Specifications

Grade	UNS	W. Nr.	Tensile Strength $\sigma_b$ /MPa	Yield Strength $\sigma_{b0.2}$ /MPa	Elongation: $\sigma_5$ %
Inconel 600	N06600	2.4816	585	240	30

### Mechanical properties: (Minimum value at 20°C)

## Inconel 601

Inconel 601 (UNS N6601) alloy has good creep cracking strength, resistance to carburization and carbon-nitriding, and excellent oxidation resistance at temperatures up to 1200° C. The alloy is mainly used in applications including trays and fixtures in industrial heating; radiant tubes, muffles and heaters in industrial furnaces; catalytic regenerators and air preheaters in petrochemical engineering. The main applications of this alloy include trays and fixtures for industrial heating; radiant tubes, muffles and heaters for industrial furnaces; catalytic regenerators and air preheaters for petrochemical engineering.

### Standards

Bar	Forging	Sheet/strip	Wire	Pipe
ASTM B166	ASTM B366	ASTM B168	ASTM B168	ASTM B775 ASTM B829 ASTM B167

## Inconel 625

Inconel 601 (UNS N6601) alloy has good creep cracking strength, resistance to carburization and carbon-nitriding, and excellent oxidation resistance at temperatures up to 1200° C. The alloy is mainly used in applications including trays and fixtures in industrial heating; radiant tubes, muffles and heaters in industrial furnaces; catalytic regenerators and air preheaters in petrochemical engineering. The main applications of this alloy include trays and fixtures for industrial heating; radiant tubes, muffles and heaters for industrial furnaces; catalytic regenerators and air preheaters for petrochemical engineering.

## Application

- Components of organic chemical processes containing chlorides, especially where acidic chloride catalysts are used.
- Digesters and bleach tanks for the pulp and paper industry.
- Absorption towers, reheaters, flue gas inlet baffles, fans (moisture), agitators, deflectors and flues in flue gas desulfurization systems.

- For the manufacture of equipment and components for use in sour gas environments
- Acetic acid and acetic anhydride reaction generator.
- Sulfuric acid condenser.
- In the field of nuclear power, it can be used in the reaction core and control rod components of nuclear water reactors.

## TITANIUM 4H

### Manufacturing Process

**Hot forging** is a forging process performed above the recrystallization temperature of the metal. **HOT ROLLING:** A rolling process carried out at temperatures above the recrystallization temperature. **Cold Rolling:** A rolling process in which the plastic deformation temperature is lower than the recovery temperature.

**Annealing:** A metal heat treatment process in which the metal is slowly heated to a certain temperature held for a sufficient period of time, and then cooled at a suitable rate (usually slowly, sometimes with controlled cooling).

**Pickling:** Immersing a workpiece in an aqueous solution, such as sulfuric acid, to remove oxides and other thin films from the metal surface. It is a pretreatment or intermediate treatment for electroplating, enameling, rolling and other processes.

### Characteristic

- titanium seed plate is the surface of the oxide film is equivalent to a good wear-resistant hair separator, the use of titanium seed plate to save the separator, so that the pole plate peeling easy, eliminating the process of pre-treatment of the seed plate, the titanium seed plate is half as light as the copper seed plate.
- The service life of titanium seed plate is more than 3 times than that of copper seed plate, and it can reach 10 to 20 years according to the operation conditions
- The electrolytic copper made from titanium seed plate has a dense crystalline organization, flat and smooth surface and excellent quality.
- because the titanium seed plate does not need to be coated with a separator, thus avoiding the pollution of the copper electrolyte.
- Improving production capacity reduces the production cost of electrolytic copper, which has better economic benefits

### Application

APPLICATION AREA	Specific Use
<b>AEROSPACE</b>	Jet engine components, airframe components, rockets, satellites, missiles and other components. Compressor and fan blades, disks, centrifuges, guide vanes, shafts, landing gear, flaps, flow stops, engine nacelles, bulkheads, wing girders, fuel tanks, boosters
<b>CHEMISTRY, PETROCHEMICALS, INDUSTRIAL AND GENERAL INDUSTRIES</b>	Used in electrolyzer, reactor, distillation tower, concentrator, separator, heat exchanger, pipeline, electrode, etc. in chlor-alkali, soda ash, plastics, petrochemical, metallurgy, salt making and other industries.
<b>SHIPS AND WARSHIPS</b>	Submarine pressure-resistant housings, propellers, water jet propellers, seawater heat exchange systems, naval pumps (valves and tubes)
<b>MARINE ENGINEERING</b>	Pipes for seawater desalination, pumps, valves and fittings for offshore oil
<b>BIOMEDICAL</b>	Artificial joints, artificial dental implants and orthodontics, pacemakers, cardiovascular stents, surgical instruments, etc.
<b>SPORTS FACILITY</b>	Golf heads, tennis rackets, badminton rackets, billiard cues, hiking sticks, ski poles, ice skates, etc.
<b>LIVING GOODS</b>	Eye-glass frames, watches, walking sticks, fishing rods, kitchenware, digital products, cases, handicrafts, decorations, etc.
<b>CONSTRUCTIONS</b>	Roofs, facades, decorations, signs, railings, pipes, etc. of buildings
<b>MOTOR VEHICLES</b>	Exhaust and muffler systems, load-bearing springs, connecting rods and bolts for automobiles, etc.

PRODUCT CHARACTERISTICS AND USAGE	CATEGORY	STANDARD NAME				MAIN CHEMICAL COMPONENTS							MAIN PURPOSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		UNIFIED NAME	JIS	GB	ASTM	EN	C	Si	Mn	P	S	Ni		Cr																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		<p><b>AUSTRIAN SYSTEMI CLASS</b></p> <tr> <td>304</td> <td>SUS304</td> <td>0Cr18Ni9</td> <td>S30400</td> <td>1.4301</td> <td>0.08</td> <td>1</td> <td>2</td> <td>0.045</td> <td>0.03</td> <td>8.0-10.5</td> <td>18.0-20.0</td> <td>Household appliances, chemical industry, medical equipment, construction industry, and others</td> </tr> <tr> <td>304L</td> <td>SUS304L</td> <td>00Cr19Ni10</td> <td>S30403</td> <td>1.4307</td> <td>0.03</td> <td>1</td> <td>2</td> <td>0.045</td> <td>0.03</td> <td>9.0-13.0</td> <td>18.0-20.0</td> <td>Petroleum equipment, chemical equipment, building materials</td> </tr> <tr> <td>309S</td> <td>SUS309S</td> <td>0Cr23Ni13</td> <td>S30908</td> <td>1.4833</td> <td>0.08</td> <td>1</td> <td>2</td> <td>0.035</td> <td>0.03</td> <td>9.0-12.0</td> <td>17.0-19.0</td> <td>Tail gas preheater, heater, cooler, and condenser</td> </tr> <tr> <td>310S</td> <td>SUS310S</td> <td>0Cr25Ni20</td> <td>S31008</td> <td>1.4845</td> <td>0.08</td> <td>1.5</td> <td>2</td> <td>0.045</td> <td>0.03</td> <td>9.0-12.0</td> <td>17.0-19.0</td> <td>Petroleum, electronics, chemical, pharmaceutical, textile, food</td> </tr> <tr> <td>316</td> <td>SUS316</td> <td>0Cr17Ni12Mo2</td> <td>S31600</td> <td>1.4401</td> <td>0.08</td> <td>1</td> <td>2</td> <td>0.045</td> <td>0.03</td> <td>10.0-14.0</td> <td>16.0-18.0</td> <td>Equipment used in seawater, chemical, papermaking, fuel and other</td> </tr> <tr> <td>316L</td> <td>SUS316L</td> <td>00Cr17Ni14Mo2</td> <td>S31603</td> <td>1.4404</td> <td>0.03</td> <td>1</td> <td>2</td> <td>0.045</td> <td>0.03</td> <td>12.0-15.0</td> <td>16.0-18.0</td> <td>production equipment-higher corrosion resistance and processing requirements of chemical equipment</td> </tr> <tr> <td>316Ti</td> <td>SUS316Ti</td> <td>0Cr18Ni12Mo2Ti</td> <td>S31635</td> <td>1.4571</td> <td>0.08</td> <td>1</td> <td>2</td> <td>0.035</td> <td>0.03</td> <td>11.0-14.0</td> <td>16.0-18.0</td> <td>Used in petrochemical, electromechanical hardware, ships, power plants, etc.</td> </tr> <tr> <td>317L</td> <td>SUS317L</td> <td>00Cr19Ni13Mo3</td> <td>S31726</td> <td>1.4438</td> <td>0.03</td> <td>1</td> <td>2</td> <td>0.045</td> <td>0.03</td> <td>11.0-15.0</td> <td>18.0-20.0</td> <td>Used in large diameter butterfly valve parts</td> </tr> <tr> <td>321</td> <td>SUS321</td> <td>0Cr18Ni10Ti</td> <td>S32100</td> <td>1.4541</td> <td>0.08</td> <td>1</td> <td>2</td> <td>0.045</td> <td>0.03</td> <td>9.0-13.0</td> <td>17.0-19.0</td> <td>Jet engine parts, heat exchanger, boiler cover</td> </tr> <tr> <td>347H</td> <td>SUS347H</td> <td>1Cr18Ni11Nb</td> <td>S34709</td> <td>1.4912</td> <td>0.07</td> <td>0.75</td> <td>2</td> <td>0.045</td> <td>0.03</td> <td>9.0-13.0</td> <td>17.0-19.01</td> <td>Used in large boiler superheater, reheater, steam piping</td> </tr> <tr> <td colspan="4"><b>SUPER AUSTENITE</b></td> <td>253MA</td> <td></td> <td></td> <td>S30815</td> <td></td> <td>0.075</td> <td>1.7</td> <td>0.08</td> <td>0.04</td> <td>0.03</td> <td>10.0-12.0</td> <td>20.0-22.0</td> <td>Sintering equipment, blast furnace equipment, heat treatment furnace and accessories, etc.</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>254SMo</td> <td></td> <td></td> <td>S31254</td> <td></td> <td>1.4547</td> <td>0.02</td> <td>0.8</td> <td>1</td> <td>0.03</td> <td>0.01</td> <td>17.5-18.5</td> <td>19.5-20.5</td> <td>Marine environment, energy field, petrochemical</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>654SMo</td> <td></td> <td></td> <td>S32654</td> <td></td> <td>1.4652</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Oil refining, chemical industry, flue gas desulphurization plant</td> </tr> <tr> <td colspan="4"><b>DUAL PHASE STEEL</b></td> <td>904L</td> <td></td> <td></td> <td>N08904</td> <td></td> <td>1.4539</td> <td>0.02</td> <td>1</td> <td>2</td> <td>0.045</td> <td>0.035</td> <td>23.0-28.0</td> <td>19.0-23.0</td> <td>Petroleum and petrochemical equipment, flue gas desulfurization unit</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>NO8926</td> <td></td> <td></td> <td>N08926</td> <td></td> <td>1.4529</td> <td>0.02</td> <td>0.5</td> <td>2</td> <td>0.03</td> <td>0.01</td> <td>24.0-26.0</td> <td>19.0-21.0</td> <td>Flue gas desulphurization plant, evaporator for phosphoric acid production</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>2205</td> <td></td> <td>00Cr22Ni5Mo</td> <td>S32250</td> <td></td> <td>1.4462</td> <td>0.03</td> <td>1</td> <td>2</td> <td>0.04</td> <td>0.03</td> <td>14.50-6.50</td> <td>21.0-24.0</td> <td>Pressure vessels, high pressure storage tanks, high pressure piping</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>2507</td> <td></td> <td>00Cr25Ni7Mo4N</td> <td>S32750</td> <td></td> <td>1.4410</td> <td>0.03</td> <td>0.8</td> <td>1.2</td> <td>0.035</td> <td>0.02</td> <td>6.0-8.0</td> <td>24.0-26.0</td> <td>Oil and gas industry, offshore oil platforms</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>F55</td> <td></td> <td>00Cr25Ni7Mo4CUWN</td> <td>S32760</td> <td></td> <td>1.4501</td> <td>0.03</td> <td>1</td> <td>1</td> <td>0.03</td> <td>0.01</td> <td>6.0-8.0</td> <td>24.0-26.0</td> <td>Neutral chloride environment, oil refining industry, agriculture</td> </tr> <tr> <td colspan="4"><b>PRECIPITATION STEEL</b></td> <td>15-5PH</td> <td></td> <td></td> <td>XM-12</td> <td></td> <td>S15500</td> <td></td> <td>1.454</td> <td>0.07</td> <td>1</td> <td>1</td> <td>0.04</td> <td>0.03</td> <td>3.5-5.5</td> <td>14.0-15.5</td> <td>High-pressure valves for aerospace, aircraft parts, component manufacturing, etc.</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>17-4PH</td> <td></td> <td></td> <td>SUS630</td> <td></td> <td>0Cr17Ni4Cu4Nb</td> <td></td> <td>S17400</td> <td></td> <td>1.4512</td> <td>0.07</td> <td>1</td> <td>1</td> <td>0.04</td> <td>0.03</td> <td>3.0-5.0</td> <td>15.5-17.5</td> <td>For the manufacture of corrosion-resistant and high-strength components such as</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>17-7PH</td> <td></td> <td></td> <td>SUS631</td> <td></td> <td>0Cr17Ni7Al</td> <td></td> <td>S17700</td> <td></td> <td>1.4568</td> <td>0.09</td> <td>1</td> <td>1</td> <td>0.04</td> <td>0.03</td> <td>6.5-7.75</td> <td>16.0-18.0</td> <td>Jet engine parts, springs, diaphragms, etc.</td> </tr> <tr> <td colspan="4"><b>HASTELLOY ALLOY</b></td> <td>Hastelloy X</td> <td></td> <td></td> <td></td> <td></td> <td>N06002</td> <td></td> <td>2.4665</td> <td>0.1</td> <td>1</td> <td>1</td> <td></td> <td>0.015</td> <td>Bal</td> <td>20.5-23.5</td> <td>Manufacture of combustion chamber components and other high-temperature components for aircraft engines</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Hastelloy B-2</td> <td></td> <td></td> <td></td> <td></td> <td>N10665</td> <td></td> <td>2.461</td> <td>0.01</td> <td>0.08</td> <td>1</td> <td>0.02</td> <td>0.01</td> <td>Bal</td> <td>0.4-0.7</td> <td>Heat exchangers, bellows compensators, chemical equipment</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Hastelloy C-22</td> <td></td> <td></td> <td></td> <td></td> <td>N06022</td> <td></td> <td>2.4602</td> <td>0.015</td> <td>0.08</td> <td>1</td> <td>0.02</td> <td>0.02</td> <td>Bal</td> <td>20.0-22.5</td> <td>Chemical and petrochemical, cellophane manufacturing, bellows</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Hastelloy C-276</td> <td></td> <td></td> <td></td> <td></td> <td>N10276</td> <td></td> <td>2.4819</td> <td>0.01</td> <td>0.08</td> <td>1</td> <td>0.04</td> <td>0.03</td> <td>bal</td> <td>14.5-16.5</td> <td>Resistant to humid chlorine, hypochlorite and liquid corrosive materials Fatty acid process heaters, condensers</td> </tr> <tr> <td colspan="4"><b>NICKEL BASED ALLOY</b></td> <td>Incone1600</td> <td></td> <td></td> <td></td> <td></td> <td>N06600</td> <td></td> <td>2.4816</td> <td>0.15</td> <td>0.5</td> <td>1</td> <td>0.015</td> <td>0.015</td> <td>72</td> <td>14.0-17.0</td> <td>Trays, fixtures in industrial heating, in industrial furnaces</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Incone1601</td> <td></td> <td></td> <td></td> <td></td> <td>N06601</td> <td></td> <td>2.4851</td> <td>0.1</td> <td>0.5</td> <td>1.5</td> <td>0.02</td> <td>0.015</td> <td>60</td> <td>21.0-25.0</td> <td>Process components for organic chemical processes containing chlorides</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Incone1625</td> <td></td> <td></td> <td></td> <td></td> <td>N06625</td> <td></td> <td>2.4856</td> <td>0.1</td> <td></td> <td>0.5</td> <td>0.015</td> <td>0.015</td> <td>Bal</td> <td>20.0-23.0</td> <td>Aero-engine components, petroleum, chemical, and nuclear power industries</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Incone1718</td> <td></td> <td></td> <td></td> <td></td> <td>N07718</td> <td></td> <td>2.4668</td> <td>0.08</td> <td>0.35</td> <td>0.35</td> <td></td> <td>0.015</td> <td>531</td> <td>17.0-21.0</td> <td>process piping, heat exchangers, carbonization equipment, chemical processing</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Incoloy800</td> <td></td> <td></td> <td></td> <td></td> <td>N08800</td> <td></td> <td>1.4876</td> <td>0.1</td> <td>1</td> <td>1.5</td> <td>0.03</td> <td>0.015</td> <td>33</td> <td>19.0-23.0</td> <td>chemical processing, pollution control equipment, oil and gas well piping</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Incoloy825</td> <td></td> <td></td> <td></td> <td></td> <td>N08825</td> <td></td> <td>2.4858</td> <td>0.05</td> <td>0.5</td> <td>1</td> <td>0.03</td> <td>0.03</td> <td>43</td> <td>19.5-23.5</td> <td>Excellent resistance to porosity in salt or seawater applications.</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Mone1400</td> <td></td> <td></td> <td></td> <td></td> <td>N04400</td> <td></td> <td>2.4360</td> <td>0.3</td> <td>0.5</td> <td>2</td> <td></td> <td>0.024</td> <td>Bal</td> <td></td> <td>Manufacture of fasteners and springs for ships; pumps for chemical equipment</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>MoneIK-500</td> <td></td> <td></td> <td></td> <td></td> <td>N05500</td> <td></td> <td>2.4375</td> <td>0.25</td> <td>0.5</td> <td>1.5</td> <td></td> <td>0.01</td> <td>63</td> <td></td> <td>Manufacture of fasteners and springs for ships; pumps for chemical equipment</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Nicke1200</td> <td></td> <td></td> <td></td> <td></td> <td>N02200</td> <td></td> <td>2.4061</td> <td>≤0.15</td> <td>≤0.35</td> <td>≤0.35</td> <td></td> <td>≤0.1</td> <td>Bal</td> <td></td> <td>Storage facilities for corrosive products, food processing, marine engineering</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Nicke1201</td> <td></td> <td></td> <td></td> <td></td> <td>N02201</td> <td></td> <td>2.4066</td> <td>≤0.02</td> <td>≤0.35</td> <td>≤0.35</td> <td></td> <td>≤0.01</td> <td>≤0.01 Bal</td> <td></td> <td>Storage equipment for corrosive products, electrical and electronics, marine engineering</td> </tr>													304	SUS304	0Cr18Ni9	S30400	1.4301	0.08	1	2	0.045	0.03	8.0-10.5	18.0-20.0	Household appliances, chemical industry, medical equipment, construction industry, and others	304L	SUS304L	00Cr19Ni10	S30403	1.4307	0.03	1	2	0.045	0.03	9.0-13.0	18.0-20.0	Petroleum equipment, chemical equipment, building materials	309S	SUS309S	0Cr23Ni13	S30908	1.4833	0.08	1	2	0.035	0.03	9.0-12.0	17.0-19.0	Tail gas preheater, heater, cooler, and condenser	310S	SUS310S	0Cr25Ni20	S31008	1.4845	0.08	1.5	2	0.045	0.03	9.0-12.0	17.0-19.0	Petroleum, electronics, chemical, pharmaceutical, textile, food	316	SUS316	0Cr17Ni12Mo2	S31600	1.4401	0.08	1	2	0.045	0.03	10.0-14.0	16.0-18.0	Equipment used in seawater, chemical, papermaking, fuel and other	316L	SUS316L	00Cr17Ni14Mo2	S31603	1.4404	0.03	1	2	0.045	0.03	12.0-15.0	16.0-18.0	production equipment-higher corrosion resistance and processing requirements of chemical equipment	316Ti	SUS316Ti	0Cr18Ni12Mo2Ti	S31635	1.4571	0.08	1	2	0.035	0.03	11.0-14.0	16.0-18.0	Used in petrochemical, electromechanical hardware, ships, power plants, etc.	317L	SUS317L	00Cr19Ni13Mo3	S31726	1.4438	0.03	1	2	0.045	0.03	11.0-15.0	18.0-20.0	Used in large diameter butterfly valve parts	321	SUS321	0Cr18Ni10Ti	S32100	1.4541	0.08	1	2	0.045	0.03	9.0-13.0	17.0-19.0	Jet engine parts, heat exchanger, boiler cover	347H	SUS347H	1Cr18Ni11Nb	S34709	1.4912	0.07	0.75	2	0.045	0.03	9.0-13.0	17.0-19.01	Used in large boiler superheater, reheater, steam piping	<b>SUPER AUSTENITE</b>				253MA			S30815		0.075	1.7	0.08	0.04	0.03	10.0-12.0	20.0-22.0	Sintering equipment, blast furnace equipment, heat treatment furnace and accessories, etc.					254SMo			S31254		1.4547	0.02	0.8	1	0.03	0.01	17.5-18.5	19.5-20.5	Marine environment, energy field, petrochemical					654SMo			S32654		1.4652								Oil refining, chemical industry, flue gas desulphurization plant	<b>DUAL PHASE STEEL</b>				904L			N08904		1.4539	0.02	1	2	0.045	0.035	23.0-28.0	19.0-23.0	Petroleum and petrochemical equipment, flue gas desulfurization unit					NO8926			N08926		1.4529	0.02	0.5	2	0.03	0.01	24.0-26.0	19.0-21.0	Flue gas desulphurization plant, evaporator for phosphoric acid production					2205		00Cr22Ni5Mo	S32250		1.4462	0.03	1	2	0.04	0.03	14.50-6.50	21.0-24.0	Pressure vessels, high pressure storage tanks, high pressure piping					2507		00Cr25Ni7Mo4N	S32750		1.4410	0.03	0.8	1.2	0.035	0.02	6.0-8.0	24.0-26.0	Oil and gas industry, offshore oil platforms					F55		00Cr25Ni7Mo4CUWN	S32760		1.4501	0.03	1	1	0.03	0.01	6.0-8.0	24.0-26.0	Neutral chloride environment, oil refining industry, agriculture	<b>PRECIPITATION STEEL</b>				15-5PH			XM-12		S15500		1.454	0.07	1	1	0.04	0.03	3.5-5.5	14.0-15.5	High-pressure valves for aerospace, aircraft parts, component manufacturing, etc.					17-4PH			SUS630		0Cr17Ni4Cu4Nb		S17400		1.4512	0.07	1	1	0.04	0.03	3.0-5.0	15.5-17.5	For the manufacture of corrosion-resistant and high-strength components such as					17-7PH			SUS631		0Cr17Ni7Al		S17700		1.4568	0.09	1	1	0.04	0.03	6.5-7.75	16.0-18.0	Jet engine parts, springs, diaphragms, etc.	<b>HASTELLOY ALLOY</b>				Hastelloy X					N06002		2.4665	0.1	1	1		0.015	Bal	20.5-23.5	Manufacture of combustion chamber components and other high-temperature components for aircraft engines					Hastelloy B-2					N10665		2.461	0.01	0.08	1	0.02	0.01	Bal	0.4-0.7	Heat exchangers, bellows compensators, chemical equipment					Hastelloy C-22					N06022		2.4602	0.015	0.08	1	0.02	0.02	Bal	20.0-22.5	Chemical and petrochemical, cellophane manufacturing, bellows					Hastelloy C-276					N10276		2.4819	0.01	0.08	1	0.04	0.03	bal	14.5-16.5	Resistant to humid chlorine, hypochlorite and liquid corrosive materials Fatty acid process heaters, condensers	<b>NICKEL BASED ALLOY</b>				Incone1600					N06600		2.4816	0.15	0.5	1	0.015	0.015	72	14.0-17.0	Trays, fixtures in industrial heating, in industrial furnaces					Incone1601					N06601		2.4851	0.1	0.5	1.5	0.02	0.015	60	21.0-25.0	Process components for organic chemical processes containing chlorides					Incone1625					N06625		2.4856	0.1		0.5	0.015	0.015	Bal	20.0-23.0	Aero-engine components, petroleum, chemical, and nuclear power industries					Incone1718					N07718		2.4668	0.08	0.35	0.35		0.015	531	17.0-21.0	process piping, heat exchangers, carbonization equipment, chemical processing					Incoloy800					N08800		1.4876	0.1	1	1.5	0.03	0.015	33	19.0-23.0	chemical processing, pollution control equipment, oil and gas well piping					Incoloy825					N08825		2.4858	0.05	0.5	1	0.03	0.03	43	19.5-23.5	Excellent resistance to porosity in salt or seawater applications.					Mone1400					N04400		2.4360	0.3	0.5	2		0.024	Bal		Manufacture of fasteners and springs for ships; pumps for chemical equipment					MoneIK-500					N05500		2.4375	0.25	0.5	1.5		0.01	63		Manufacture of fasteners and springs for ships; pumps for chemical equipment					Nicke1200					N02200		2.4061	≤0.15	≤0.35	≤0.35		≤0.1	Bal		Storage facilities for corrosive products, food processing, marine engineering					Nicke1201					N02201		2.4066	≤0.02	≤0.35	≤0.35		≤0.01	≤0.01 Bal
304	SUS304	0Cr18Ni9	S30400	1.4301	0.08	1	2	0.045	0.03	8.0-10.5	18.0-20.0	Household appliances, chemical industry, medical equipment, construction industry, and others																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
304L	SUS304L	00Cr19Ni10	S30403	1.4307	0.03	1	2	0.045	0.03	9.0-13.0	18.0-20.0	Petroleum equipment, chemical equipment, building materials																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
309S	SUS309S	0Cr23Ni13	S30908	1.4833	0.08	1	2	0.035	0.03	9.0-12.0	17.0-19.0	Tail gas preheater, heater, cooler, and condenser																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
310S	SUS310S	0Cr25Ni20	S31008	1.4845	0.08	1.5	2	0.045	0.03	9.0-12.0	17.0-19.0	Petroleum, electronics, chemical, pharmaceutical, textile, food																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
316	SUS316	0Cr17Ni12Mo2	S31600	1.4401	0.08	1	2	0.045	0.03	10.0-14.0	16.0-18.0	Equipment used in seawater, chemical, papermaking, fuel and other																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
316L	SUS316L	00Cr17Ni14Mo2	S31603	1.4404	0.03	1	2	0.045	0.03	12.0-15.0	16.0-18.0	production equipment-higher corrosion resistance and processing requirements of chemical equipment																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
316Ti	SUS316Ti	0Cr18Ni12Mo2Ti	S31635	1.4571	0.08	1	2	0.035	0.03	11.0-14.0	16.0-18.0	Used in petrochemical, electromechanical hardware, ships, power plants, etc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
317L	SUS317L	00Cr19Ni13Mo3	S31726	1.4438	0.03	1	2	0.045	0.03	11.0-15.0	18.0-20.0	Used in large diameter butterfly valve parts																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
321	SUS321	0Cr18Ni10Ti	S32100	1.4541	0.08	1	2	0.045	0.03	9.0-13.0	17.0-19.0	Jet engine parts, heat exchanger, boiler cover																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
347H	SUS347H	1Cr18Ni11Nb	S34709	1.4912	0.07	0.75	2	0.045	0.03	9.0-13.0	17.0-19.01	Used in large boiler superheater, reheater, steam piping																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
<b>SUPER AUSTENITE</b>				253MA			S30815		0.075	1.7	0.08	0.04	0.03	10.0-12.0	20.0-22.0	Sintering equipment, blast furnace equipment, heat treatment furnace and accessories, etc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
				254SMo			S31254		1.4547	0.02	0.8	1	0.03	0.01	17.5-18.5	19.5-20.5	Marine environment, energy field, petrochemical																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				654SMo			S32654		1.4652								Oil refining, chemical industry, flue gas desulphurization plant																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
<b>DUAL PHASE STEEL</b>				904L			N08904		1.4539	0.02	1	2	0.045	0.035	23.0-28.0	19.0-23.0	Petroleum and petrochemical equipment, flue gas desulfurization unit																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				NO8926			N08926		1.4529	0.02	0.5	2	0.03	0.01	24.0-26.0	19.0-21.0	Flue gas desulphurization plant, evaporator for phosphoric acid production																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				2205		00Cr22Ni5Mo	S32250		1.4462	0.03	1	2	0.04	0.03	14.50-6.50	21.0-24.0	Pressure vessels, high pressure storage tanks, high pressure piping																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				2507		00Cr25Ni7Mo4N	S32750		1.4410	0.03	0.8	1.2	0.035	0.02	6.0-8.0	24.0-26.0	Oil and gas industry, offshore oil platforms																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				F55		00Cr25Ni7Mo4CUWN	S32760		1.4501	0.03	1	1	0.03	0.01	6.0-8.0	24.0-26.0	Neutral chloride environment, oil refining industry, agriculture																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
<b>PRECIPITATION STEEL</b>				15-5PH			XM-12		S15500		1.454	0.07	1	1	0.04	0.03	3.5-5.5	14.0-15.5	High-pressure valves for aerospace, aircraft parts, component manufacturing, etc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				17-4PH			SUS630		0Cr17Ni4Cu4Nb		S17400		1.4512	0.07	1	1	0.04	0.03	3.0-5.0	15.5-17.5	For the manufacture of corrosion-resistant and high-strength components such as																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
				17-7PH			SUS631		0Cr17Ni7Al		S17700		1.4568	0.09	1	1	0.04	0.03	6.5-7.75	16.0-18.0	Jet engine parts, springs, diaphragms, etc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
<b>HASTELLOY ALLOY</b>				Hastelloy X					N06002		2.4665	0.1	1	1		0.015	Bal	20.5-23.5	Manufacture of combustion chamber components and other high-temperature components for aircraft engines																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Hastelloy B-2					N10665		2.461	0.01	0.08	1	0.02	0.01	Bal	0.4-0.7	Heat exchangers, bellows compensators, chemical equipment																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Hastelloy C-22					N06022		2.4602	0.015	0.08	1	0.02	0.02	Bal	20.0-22.5	Chemical and petrochemical, cellophane manufacturing, bellows																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Hastelloy C-276					N10276		2.4819	0.01	0.08	1	0.04	0.03	bal	14.5-16.5	Resistant to humid chlorine, hypochlorite and liquid corrosive materials Fatty acid process heaters, condensers																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
<b>NICKEL BASED ALLOY</b>				Incone1600					N06600		2.4816	0.15	0.5	1	0.015	0.015	72	14.0-17.0	Trays, fixtures in industrial heating, in industrial furnaces																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Incone1601					N06601		2.4851	0.1	0.5	1.5	0.02	0.015	60	21.0-25.0	Process components for organic chemical processes containing chlorides																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Incone1625					N06625		2.4856	0.1		0.5	0.015	0.015	Bal	20.0-23.0	Aero-engine components, petroleum, chemical, and nuclear power industries																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Incone1718					N07718		2.4668	0.08	0.35	0.35		0.015	531	17.0-21.0	process piping, heat exchangers, carbonization equipment, chemical processing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Incoloy800					N08800		1.4876	0.1	1	1.5	0.03	0.015	33	19.0-23.0	chemical processing, pollution control equipment, oil and gas well piping																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Incoloy825					N08825		2.4858	0.05	0.5	1	0.03	0.03	43	19.5-23.5	Excellent resistance to porosity in salt or seawater applications.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Mone1400					N04400		2.4360	0.3	0.5	2		0.024	Bal		Manufacture of fasteners and springs for ships; pumps for chemical equipment																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				MoneIK-500					N05500		2.4375	0.25	0.5	1.5		0.01	63		Manufacture of fasteners and springs for ships; pumps for chemical equipment																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Nicke1200					N02200		2.4061	≤0.15	≤0.35	≤0.35		≤0.1	Bal		Storage facilities for corrosive products, food processing, marine engineering																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Nicke1201					N02201		2.4066	≤0.02	≤0.35	≤0.35		≤0.01	≤0.01 Bal		Storage equipment for corrosive products, electrical and electronics, marine engineering																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
TITANIUM PLATE SPECIFICATIONS	GRADES	TAI, TA2, TA3, TC4, GR1, GR2, GR5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	STANDARD	GB/T 3621-2007, GB/T 13810-2007, ASTM B265, ASTM F136, ASTM F67																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	SIZES	T 0.5-5.0MM X W1000MM X L 2000-3500MM, T 6.0-30MM X W1000-2500MM X L 3000-6000MM, T 30-80MM X W1000MM X L 2000MM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	APPLICATION	Metallurgy, electronics, medical, chemical, petroleum, pharmaceutical, aerospace, etc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			



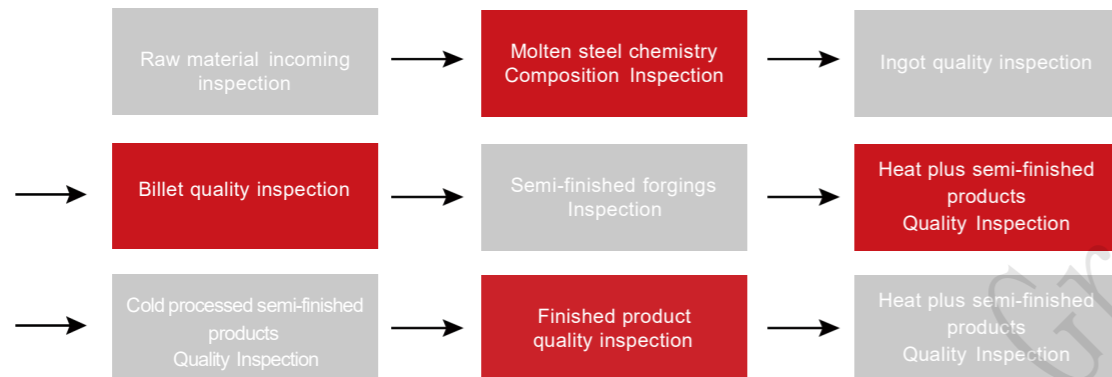
	Types of Steel Names of alloys	Main components	JISN umber	UNS Number	UNS Number	specifications		COMMONLY REFERRED TO AS OTHER COMPANIES REGISTERED TRADEMARKS,ETC	MAIN PURPOSE	
						ASME	ASTM			
Highly corrosion-resistant steels and alloys	NAS255	20Cr-24Ni-43Mo-1.5Cu	SUS890L	N08904	1.4539	SA-240/SB-625	A240	AL904L™	Chemical Equipment	
	NAS335X	20Cr-33Ni-2.5Mo-3Cu-0.4Nb	—	NI08020	2.4660	SA-240/SB-463	A240/B463	Alloy20	Chemical Equipment	
	NAS185N	20Cr-18Ni-6Mo-0.8Cu-0.2N	SUS312L	S31254	1.4547	SA-240	A240	254SMO®	Food production equipment and salt making equipment	
	NAS254N	23Cr-25Ni-5.5Mo-0.2N	SUS836L	S32053	—	Code Case 2445-2	A240	OUR PATENTED ALLOY	Flue gas desulfurization equipment	
	NAS254NIM	21Cr-24Ni-6Mo-0.2N	—	N08367	—	SA-240/SB-688	A240/B688	AL-6XN®	Flue gas desulfurization equipment	
	NAS255NM	20Cr-25Ni-6Mo-0.2N-1Cu	—	N08926	1.4529	SA-240/SB-625	A240/B625	—	Flue gas desulfurization equipment	
	NAS224N	23Cr-22Ni-6Mo-0.25N	—	S32050	—	SA-240	A240/ A249	—	Condenser tube	
	NAS325N	27Cr-31Ni-6.5Mo-1.2Cu-0.20N	—	N08031	—	SB-625	B625	Alloy31	Chemical equipment, pollution prevention machinery, marine structures	
	NAS354N	23Cr-35Ni-7.5Mo-0.2N	—	N08354	—	Code Case 2585-1	B625	OUR PATENTED ALLOY	Salt making equipment and chemical equipment	
	NAS329J3L*	22Cr-5.3Ni-3.2Mo-0.16N	SUS329J3L	SB2205*	1.4462	SA-240	A240	2205	Chemical Equipment	
	NAS64	25Cr-6.5Ni-3.3Mo-0.17N	SUS329J4L	S32506	—	Code Case 2543	A240	OUR PATENTED ALLOY	Fan sink, chemical equipment	
	NAS74N	25Cr-7Ni-3.8Mo-0.27N	SUS327L	S32750	1.4410	SA-240	A240	2507	Seawater desalination plant and equipment	
	NAS75N	25Cr-7Ni-3.6Mo-0.6Cu-0.6W-0.27N	—	S32760	1.45015	SA-240	A240	—	Seawater desalination plant and equipment	
	NAS825	40Ni-23Cr-3Mo-2Cu-0.7Ti	NCF825	N08825	2.4858	SB-424	B424	INCOLOY® 825	Chemical equipment, crude oil and natural gas production equipment	
	NAS625	62Ni-22Cr-9Mo-3.7Nb-0.2Ti-0.2Al	NCF625	N06625	—	SB-443	B443	INCONEL® 625	Chemical equipment, marine structures, and pollution prevention machinery	
NASNW22	57Ni-21Cr-14Mo-3W-4Fe	NW6022	N060221	2.4602	SB-575	B575	HASTELLOY® C-22®	Chemical Equipment		
NASNW276	59Ni-15Cr-16Mo-4W-5Fe	NWO276	N102761	2.4819	SB-575	B575	HASTELLOY® C-276	Chemical Equipment		
NASNW400	65Ni-32Cu-1Fe	NW4400	N04400	—	SB-127	B127	MONEL400	Seawater desalination plant and equipment		
Heat-resistant steel alloys	NASH330	35Ni-18Cr-1.2Si	—	NO8330	—	SB-536	B536	—	Heat treatment components, heat treatment furnace components	
	NAS800	32Ni-20Cr-0.4Ti-0.3Al	NCF800	NO8800	1.4876	SB-409	B409	INCOLOY®800	Electric heating pipes, heat treatment components, heat exchangers	
	NAS800HI	32Ni-20Cr-0.2Ti-0.2Al	NCF800H	NO8810	1.4876	SB-409	B409	INCOLOY®800H	Heat treatment components, heat exchangers	
	NAS800T	32Ni-20Cr-0.5Ti-0.5Al	—	NO8811	1.4876	SB-409	B409	INCOLOY®800HT®	Heat treatment components, heat exchangers	
	NASH840	19Ni-20Cr-0.4Ti-0.4Al	—	—	—	—	—	INCOLOY840	Electric heating tubes, heat treated components	
	NASH880	25Ni-23.5Cr-1.2Mo-0.3Al-0.3Ti	—	—	—	—	—	—	Electric heating tubes, heat treated components	
	NAS600	77Ni-16Cr-6Fe	NCF600	N06600	2.4816	—	B168	INCONEL®600	Heat treatment furnace components.	
	NAS601	60Ni-23Cr-1Al-0.2Ti	NCF601	N06601	2.4851	SB-168	B168	INCONEL®601	Gas turbine components, heat treatment furnace components	
	NAS660	25Ni-15Cr-1Mo-2Ti-0.3V-0.2Al	SUH660	S662861	—	SB-168	—	A-286	Components of diesel engines	
	NASH38X	38Ni-25Cr-0.6Nb-0.2N	—	N081201	—	SB-409	B409	HR-120®	Heat treatment components, heat treatment furnace components	
	NASHX	47Ni-22Cr-9Mo-18Fe-1.5Co-0.6W	NW6002	N06002	2.4665	SB-435	B435	HASTELLOY®X	Gas turbine components, heat treatment furnace components	
	Stainless steels high strength	NAS630	17Cr-4Ni-4Cu-0.2Nb	SUS630	S17400	1.4542	SA-693	A693	17-4PH®	Spring plate, stamping plate, steel strip
		NAS631	17Cr-7Ni-1Al	SUS631	S17700	1.4568	SA-693	A693	17-7PH®	Spring plate, gasket
NASXM-19		21Cr-12Ni-5Mn-2Mo-0.2Nb-0.2V-0.3N	—	S20910	—	SA-240	A240	—	Chemical Equipment	
Low High Heat Expansion Alloys	NAS36	36Ni-Fe	—	K93600	1.3912	—	B753	Fe-36Ni	Metal molds for bimetallic, trimetallic, liquefied natural gas carriers, and CFRP	
	NAS42	42Ni-Fe	—	K94100	1.3917	—	B753	Fe-42Ni	IC framework, metal mask	
	NAS21-6	21 Ni-6Cr-Fe	—	—	—	—	—	—	Bimetal, Trimetallic	
	NAS22-3	22Ni-3Cr-Fe	—	—	—	—	—	—	Bimetal, Trimetallic	
	NAS206MN	20Ni-6Mn-Fe	—	—	—	—	—	—	Bimetal Trimetallic	
	NAS29CO	29Ni-17Co-Fe	—	K94610	1.8981	—	F15	—	Glass sealing material, attack rate amplification tube, microwave tube	
NAS47-6	47Ni-6Cr-Fe	—	—	2.4486	—	—	—	Glass sealing material, anode cap		
Material soft magnetic	NASPB	48Ni-Fe	—	—	1.39201	—	—	—	Transformer core, vibration plate, clock stepper motor, magnetic shielding	
	NASPC	77Ni-4Mo-5Cu-Fe	—	—	2.4530	—	—	—	Transformer core, magnetic head, magnetic shield, clock stepper motor	
Material non Magnetic	NASNM15M	17Cr-15Mn-4Ni-0.3N	—	—	—	—	—	—	Non magnetic metal spring plate, mobile phone.	
	NASNMI7	17Cr-17Mn-7.3Ni	—	—	—	—	—	—	Metal parts and electronic components for clothing	
Nickel	NASNi201	99Ni	NW2201	N02201	2.4068	SB-162	B162	NI201	Caustic alkali manufacturing equipment, electrode components	

# QUALIFIED QUALITY INSPECTION

## Manufacturing process

High-quality raw materials, advanced technology and scientific management methods are the guarantee for producing high-quality products. The company follows the above principles to organize the production of products. It has established a whole set of production process operation procedures and quality control procedures for semi-finished products and finished products to ensure that the quality of products meets the standard requirements. In terms of quality control, the company has chemical and mechanical property testing instruments such as direct reading spectrometer, tensile testing machine and flaw detector. These instruments are used for the quality control of the whole production process and finished products.

**Our products in the production process, in accordance with the quality inspection standards of the corresponding process, the procedures for being inspected are as follows:**



The company has perfect testing and inspection equipment, the establishment of a perfect inspection and testing system, the production process requires random self-inspection, the establishment of inspection, full inspection system, strict quality control, layer by layer.



# WITH DREAMS IN MIND, STRIVING FOR THE WORLD

## LOGISTICS AFTER-SALES SERVICE

Green Harbor continuously improves the market network coverage, with warehousing and processing centers in Shanghai and Wuxi, business projects in 28 provinces, municipalities and autonomous regions in China. It maintains a good strategic cooperative relationship with large domestic power companies, and the production of desulfurization equipment exported to Europe, America and Southeast Asia and other places. At the same time, the company constructs a perfect after-sales service system to realize good interaction with customers.

## BEAUTIFUL VISION

Committed to every corner of the world.

## QUALITY WITHOUT MESS

Facing the new opportunities and challenges brought by the integration of global economy, Green Harbor spares no effort in demanding the quality of its products. From the selection of materials by the agent steel mill to the processing and distribution of each link of the system, the concept of excellence of profound and strictness is embodied in every operation flow, every production process, and every plate and every pipe. The enterprise has successfully passed the IATF16949, ISO9001 quality management system certification, established a complete and fruitful management and quality assurance system, with a high sense of quality and responsibility to win the trust of the market, galloping in the field of high-end stainless steel.



## INDUSTRY BENCHMARK

Pragmatic innovation, creating customer satisfied stainless steel, nickel based alloys, super austenitic titanium materials, etc, to assist in technology manufacturing and desulfurization and environmental protection, serving our customers faithfully.

## LOOK INTO THE FUTURE

The staffs of Green Harbor always have dreams in mind, and attract many customers and partners with exquisite product technology and high-quality service to create the future together with our customers in good faith. We are convinced that with the efforts of all the staff, Green Harbor will be able to seize new opportunities, realize new breakthroughs, and become a first-class domestic and internationally renowned professional environmental protection industry supporting base.