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鞍钢联众(广州)不锈钢有限公司
Angang Lianzhong Stainless Steel Corporation

创新

INNOVATION
GROWTH 成长

责任 RESPONSIBILITY

永续 CONTINUITY

历经一番的洗礼
 才能诞生耀眼的尖兵
 积极的向前迈进
 才能尝到甜美的果实
 创新、成长、责任、永续
 是我们不懈的追求
 坚持做到最好
 是我们唯一的准则
 一步一个脚印
 与您一同成长
 Smelting and polishing
 produces glowing stars.
 Assertive steps ahead
 promise us the fruitful results.
 Innovation, growth, responsibility and continuity
 are our guiding posts.
 Commitment to the best
 is our only insistence.
 Step by step forward,
 let us grow together.


 连续冷轧线
 WIDE ROLLED ANNEALING PICKLING LINE
 为世界
 打造光亮的明天

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公司介绍

鞍钢联众（广州）不锈钢有限公司投资总额83亿元人民币，占地面积120万平方米，是百万吨级炼钢、热轧、冷轧一贯作业不锈钢厂，华南地区重量级的专业不锈钢生产基地，主要生产不锈钢扁钢粒、不锈钢钢板、热轧不锈钢黑皮钢卷、热轧不锈钢钢卷（NO.1）、冷轧不锈钢钢卷（2D/2B）等产品。

鞍钢联众的设备、技术和工艺均达到世界领先水平。其中，建设有世界上第一条集传统四大生产线（轧延线、冷轧退火酸洗线、调质轧延线和张力平整线）于一体的不锈钢连续冷轧线和国内第一条可以处理10mm厚板卷的热轧退火酸洗线，并建设有世界上最先进的废酸全回收再生系统、国内第一套可以处理高浓度硝酸盐氮废水的废水生化脱硝系统等各项资源循环利用、污染防治设施。

鞍钢联众已通过ISO9001、ISO14001、OHSAS18001、PED、ISO17025、CNAS等多项管理体系和产品国际认证，将继续秉持“创新、成长、责任、永续”的经营理念，努力打造“世界顶尖的不锈钢专业制造企业”。

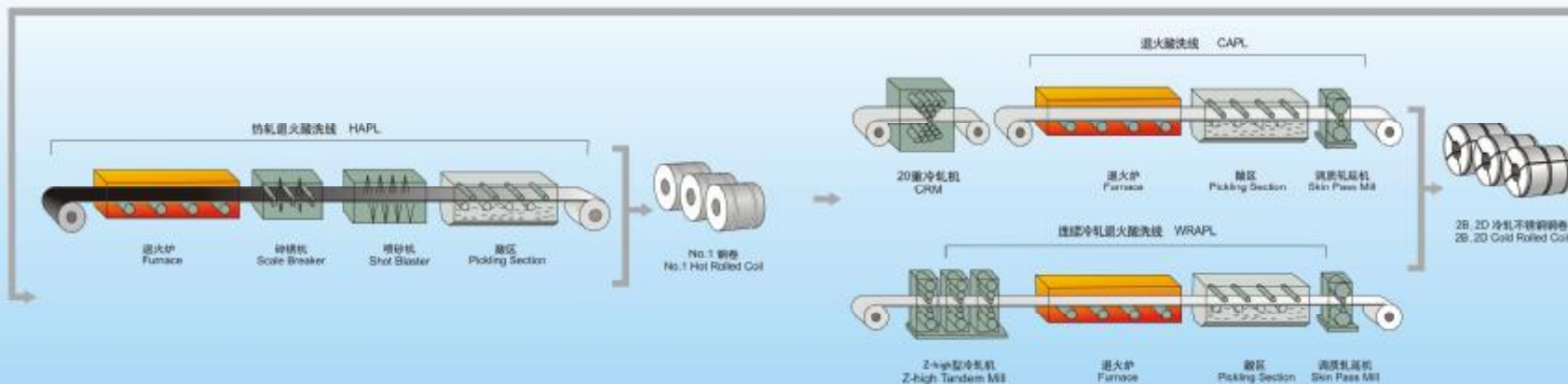
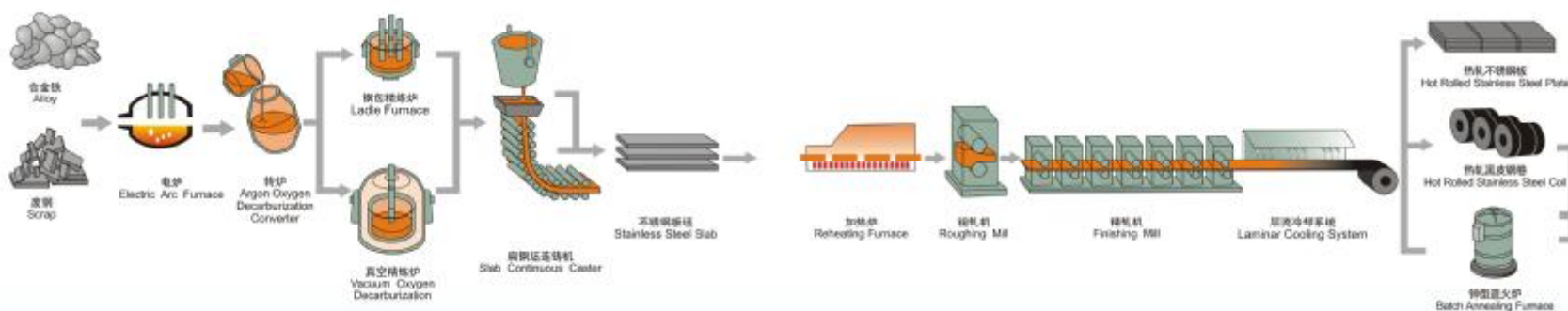
INTRODUCTION

With a total investment of eight billion and three hundred million, a covering area of 1,200 thousand square metres and an annual capacity exceeding one million metric tons, Angang Lianzhong Stainless Steel Corporation is a powerful and professional integrated stainless steel manufacturer in Southern China. Its main products include slabs, plates, hot rolled black/white coils (NO.1) and cold rolled coils (NO.2D/2B).

Angang Lianzhong owns the world's leading facilities and the first class craftsmanship and technology, such as WRAPL, the first continuous cold rolled annealing pickling line in the world which makes the traditional rolling line, annealing & pickling line, skin pass mill and tension leveling line together as one continuous line; and HAPL, the first production line in mainland China which can produce 10mm-thick white coils. Angang Lianzhong also sets up resource recycling and pollution control system, such as the world's most advanced acid recycling system and the first chemical and biological denitrification of wastewater system in China which can dispose of wastewater with a high concentration of Nitrate-nitrogen.

Angang Lianzhong has obtained the international quality management system and product certifications of ISO9001, ISO14001, OHSAS18001, PED, ISO017025 and CNAS. LISCO will keep "Innovation, Growth, Responsibility and Continuity" as its business philosophy and exerts itself to become "the global top professional stainless steel manufacturer".

生产工艺流程 MANUFACTURING PROCESS





奥氏体 304/304L AUSTENITE 304/304L

产品特性 Features	产品用途 Application
304: 奥氏体不锈钢, 具有良好的耐腐蚀性、耐热性、机械性能优良、无磁性。 304L: 304不锈钢的低碳钢种, 兼具304不锈钢的优点, 由于碳含量低, 制品耐腐蚀性能优异且焊接性佳。	304: 建筑工程、装饰装潢、化学食品工业、医药、纤维产业、汽车零部件等。 304L: 要求耐腐蚀性的化工、煤炭、石油、原子能工业等领域; 耐热零部件及焊接后无法处理的机械构件等。
304: A common austenitic steel with good corrosion resistance, thermal resistance, mechanical properties, and nonmagnetic. 304L: Low-carbon type of 304 with all qualities of 304, but also with excellent inter-granular corrosion resistance and weldability.	304: Architecture, Decoration, Chemical industry, Food processing equipment, Medicine, Fiber industry and Auto components. 304L: Chemical, Coal, Petroleum and Nuclear energy industries, the heat-resistant parts and the parts that are difficult to make heat treatment after welding.



成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

规范 Specification	钢种 Grade	主要化学成分(wt%) Chemical Composition (wt%)			
		C	Mn	Ni	Cr
ASTM	304	≤0.07	≤2.00	8.00-10.50	17.50-19.50
JIS/GB	SUS 304 / 06Cr19Ni10	≤0.08	≤2.00	8.00-10.50	18.00-20.00
ASTM	304L	≤0.03	≤2.00	8.00-12.00	17.50-19.50
JIS/GB	SUS 304L / 022Cr19Ni10	≤0.03	≤2.00	8.00-13.00/8.00-12.00	18.00-20.00

2. 机械性能及物理性能 Mechanical & Physical Properties

规范 Specification	钢种 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm²)	抗拉强度 T.S. (N/mm²)	延伸率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (GPa)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ mm/m·°C (20-100°C)	导热率 Thermal Conductivity W/m·°C (100°C)
JIS	SUS 304	≥205	≥520	≥40	≤90	0.5	193	17.2	16.2
ASTM/GB	304 / 06Cr19Ni10	≥205	≥515	≥40	≤92				
JIS	SUS 304L	≥175	≥480	≥40	≤90	0.5	193	17.2	16.3
ASTM/GB	304L / 022Cr19Ni10	≥170	≥485	≥40	≤92				

奥氏体 304J1 AUSTENITE 304J1

产品特性 Features	产品用途 Application
1. 奥氏体不锈钢, 无磁性; 2. 含镍量较304钢种低, 具有成本优势; 3. 添加Cu, 具有良好的成型加工性能; 4. 机械强度及耐腐蚀性与304钢种相近。	304J1钢种兼具优良的成型及焊接等性能, 可广泛用于厨具器具、家电制品、建筑装饰等多方面的领域, 属多功能之新型材料。 With excellent formability and weldability, 304J1 can be widely used in Kitchen utensil, Electrical appliances, Construction decoration and other aspects. It's a new grade with multi-functions.
1. Austenitic stainless steel, nonmagnetic; 2. Lower contents of Ni compared with 304, low cost; 3. Excellent formability and deep drawability with the addition of Cu; 4. Similar tensile strength and corrosion resistance to conventional 304.	

成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

规范 Specification	钢种 Grade	主要化学成分(wt%) Chemical Composition (wt%)				
		C	Mn	Ni	Cr	Cu
JIS	SUS 304J1	≤0.08	≤3.00	8.00-9.00	15.00-18.00	1.00-3.00

2. 机械性能及物理性能 Mechanical & Physical Properties

规范 Specification	钢种 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm²)	抗拉强度 T.S. (N/mm²)	延伸率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (GPa)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ mm/m·°C (20-100°C)	导热率 Thermal Conductivity W/m·°C (100°C)
JIS	SUS 304J1	≥155	≥450	≥40	≤90	0.5	194	17.3	16.3





奥氏体 316/316L AUSTENITE 316/316L

产品特性 Features

- 316: 奥氏体不锈钢, 因添加合金Mo, 其耐腐蚀性, 高温强度特别优秀, 无磁性。
- 316L: 316的低碳规格, 耐腐蚀性能优异, 可在更苛刻的腐蚀条件下使用。
- 316: Austenitic stainless steel with excellent corrosion resistance and elevated temperature strength by adding Mo, nonmagnetic.
- 316L: A low carbon type of 316, excellent resistance to inter-granular corrosion in more corrosive environment.

产品用途 Application

- 316: 作为具有良好耐腐蚀性的材料, 适用于食品, 医药, 染料, 农药及肥料等生产设备, 同时广泛应用于石油化工, 核反应堆, 海洋设施等领域。
- 316L: 因其优异的耐腐蚀性能, 被广泛应用于腐蚀性强的环境, 同时用于制造使用环境和苛刻成型难以处理的机械构件。
- 316: Equipment for Food, Paper, Dyes, Acetic acid, Fertilizer, Petrochemical and Nuclear reactor industries and the installations along the sea coast.
- 316L: Widely used in corrosion-susceptible environment and some mechanical components that are difficult to make heat treatment after forming in more corrosive environment.



成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

规范 Specification	牌号 Grade	主要化学成分 (wt%) Chemical Composition (wt%)				
		C	Mn	Ni	Cr	Mo
ASTM / JIS / GB	316 / SUS 316 / 06Cr17Ni12Mo2	≤0.08	≤2.00	10.00-14.00	16.00-18.00	2.00-3.00
ASTM / GB	316L / 022Cr17Ni12Mo2	≤0.03	≤2.00	10.00-14.00	16.00-18.00	2.00-3.00
JIS	SUS 316L	≤0.03	≤2.00	12.00-15.00	16.00-18.00	2.00-3.00

2. 机械性能及物理性能 Mechanical & Physical Properties

规范 Specification	牌号 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm ²)	抗拉强度 T.S. (N/mm ²)	延伸率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (N/mm ²)	热膨胀系数 Coefficient of Heat Expansion 95° centim/°C (25-100°C)	导热系数 Thermal Conductivity W/m·°C (100°C)
JIS	SUS 316	≥205	≥520	≥40	≤90	0.5	193	16.6	16.1
ASTM / GB	316 / 06Cr17Ni12Mo2	≥205	≥515	≥40	≤95	0.5	193	16.6	16.1
JIS	SUS 316L	≥175	≥490	≥40	≤90	0.5	193	16.6	16.1
ASTM / GB	316L / 022Cr17Ni12Mo2	≥170	≥485	≥40	≤95	0.5	193	16.6	16.1

奥氏体 321 AUSTENITE 321

产品特性 Features

1. 奥氏体不锈钢, 无磁性;
2. 添加了Ti, 耐晶间腐蚀性优异, 焊接性好;
3. 在氧化性酸中具有优良的耐蚀性;
4. 在碱液和大部分有机酸和无机酸及大气, 水蒸气中耐蚀性最佳。

产品用途 Application

因其优异的耐晶间腐蚀性能力, 被广泛应用于建筑工程, 化工设备等领域, 如制空器, 汽轮机罩, 锅炉气壳, 压力容器及部分焊接, 合金后无法处理的零件等。

1. Austenitic stainless steel, nonmagnetic;
2. Excellent inter-granular corrosion resistance and weldability by adding Ti content;
3. Good corrosion resistance in oxidizing acid;
4. Good corrosion resistance in alkali lye, most organic or inorganic acid, air and aqueous vapour.

Architecture and Chemical process equipment, such as Aircraft, Seamless pipe, Boiler, Pressure vessel and some parts which are difficult to make heat treatment after welding or assembling.

成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

规范 Specification	牌号 Grade	主要化学成分 (wt%) Chemical Composition (wt%)				
		C	Mn	Ni	Cr	Ti
ASTM	321	≤0.08	≤2.00	9.00-12.00	17.00-19.00	5(C+N)×0.75
JIS	SUS 321	≤0.08	≤2.00	9.00-13.00	17.00-19.00	≥5C
GB	06Cr18Ni11Ti	≤0.08	≤2.00	9.00-12.00	17.00-19.00	≥5C

2. 机械性能及物理性能 Mechanical & Physical Properties

规范 Specification	牌号 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm ²)	抗拉强度 T.S. (N/mm ²)	延伸率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (N/mm ²)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ centim/°C (20-100°C)	导热系数 Thermal Conductivity W/m·°C (100°C)
JIS	SUS 321	≥205	≥520	≥40	≤90	0.5	193	16.6	16.1
ASTM / GB	321 / 06Cr18Ni11Ti	≥205	≥515	≥40	≤95	0.5	193	16.6	16.1





奥氏体 310S AUSTENITE 310S

产品特性 Features

高Cr、高Ni的高合金不锈钢，无磁性；具有优良的塑性和焊接性能。高温强度高，耐蚀性好，可在需要高温强度、耐腐蚀性及抗氧化性能等综合性能的环境下使用。

An alloy stainless steel with high Cr and Ni content, nonmagnetic, excellent forming and weldability, good elevated temperature strength and corrosion resistance, and it can be used in the environment involved elevated temperature strength, resistant to corrosion and oxidation.

产品用途 Application

因其优异的性能，被广泛用于化工设备、耐蚀件等领域。典型的应用为大型箱、干燥设备、工业炉的内衬、热交换器、炼油设备等。

Widely used in the fields related to chemical equipment and heat-resistant parts, and typically applied in saggers, drying equipment, industrial furnace lining, heat-exchangers, petroleum refinery equipment, etc.

成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

规范 Specification	牌号 Grade	主要化学成分(wt%) Chemical Composition (wt%)						
		C	Si	Mn	P	S	Ni	Cr
JIS	SUS 310S	≤0.04	≤1.50	≤2.00	≤0.045	≤0.030	16.0-22.0	24.0-26.0

2. 机械性能及物理性能 Mechanical & Physical Properties

规范 Specification	牌号 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm ²)	抗拉强度 T.S. (N/mm ²)	延伸率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (9N/mm ²)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ /cm/°C (20-100°C)	导热性 Thermal Conductivity W/m·°C (100°C)
JIS	SUS 310S	≥205	≥520	≥40	≤90	0.50	200	15.9	14.2



铁素体 430 FERRITE 430

产品特性 Features

1. 铁素体不锈钢，有磁性；
2. 热膨胀率低，热导性好，具有良好的成形及耐腐蚀性；
3. 不添加钼、钨等贵重合金，具有成本优势；
4. 透过适当的加工处理(例如光面退火、镜面加工)，可得优异之外观表面。

1. A representative grade of ferritic stainless steel, magnetic;
2. Low coefficient of thermal expansion, high thermal conductivity and good formability and oxidation resistance;
3. Low cost without Ni and Mo contents;
4. A bright surface achieved by Bright Annealing or Mirror Finishing.

产品用途 Application

因其经济、耐蚀、成形性好等特点，被广泛用于餐厨用具、家电产品、建筑饰板等领域。

1. 建筑工程：外墙、支柱、窗框、楼梯等；
2. 厨房用品：洗碗池、煤气台、操作台面、器皿、锅类等；
3. 其它方面：电脑零部件、汽车装饰等。

1. Architecture Building: Surface, Pillar, Window frame, Stair hand-rail because of low cost, good corrosion resistance and formability;
2. Kitchen Utensil: Washing machine drum, Gas range stove, Plate, Housewares, Holloware;
3. Others: Computer components, Automotive trim.

成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

规范 Specification	牌号 Grade	主要化学成分(wt%) Chemical Composition (wt%)				
		C	Mn	P	S	Cr
ASTM	430	≤0.12	≤1.00	≤0.040	≤0.030	16.00-18.00
JIS	SUS 430	≤0.12	≤1.00	≤0.040	≤0.030	16.00-18.00
GB	16Cr17	≤0.12	≤1.00	≤0.040	≤0.030	16.00-18.00

2. 机械性能及物理性能 Mechanical & Physical Properties

规范 Specification	牌号 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm ²)	抗拉强度 T.S. (N/mm ²)	延伸率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (9N/mm ²)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ /cm/°C (20-100°C)	导热性 Thermal Conductivity W/m·°C (100°C)
JIS	SUS 430	≥205	≥420	≥22	≤80	0.46	200	16.4	26.1
ASTM/GB	430/16Cr17	≥205	≥450	≥22	≤80				





铁素体 409L FERRITE 409L

产品特性 Features

1. 低C、N，添加Ti的铁素体钢种，有磁性；
2. 不含Ni，具有低成本、价格稳定的优势；
3. 热传导率高，热膨胀率低，抗焊接变形佳；
4. 具有良好的高温耐蚀性及高温强度；
5. 因含C量低且添加Ti，焊接后无需进行热处理。

1. Ferritic stainless steel with low C, N contents and addition of Ti, magnetic;
2. Low cost and stable price without Ni content;
3. High thermal conductivity, low coefficient of thermal expansion, good formability and bendability;
4. Good corrosion resistance and elevated temperature strength;
5. Unnecessary for heat treatment after welding due to low C and the addition of Ti.



产品用途 Application

因其优异的高温耐蚀性能及高温强度，被广泛用于制作汽车排气系统相关零件，如排气罩、催化转换器、回气管管路等。

Automotive exhaust parts, such as Exhaust manifold, Catalytic converter, Muffler, etc.

成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

规范 Specification	钢种 Grade	主要化学成分(wt%) Chemical Composition (wt%)			
		C	Mn	Cr	Ti
JIS	SUH 409L	≤0.03	≤1.00	10.50~11.75	8°C~0.75

2. 机械性能及物理性能 Mechanical & Physical Properties

规范 Specification	钢种 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm ²)	抗拉强度 T.S. (N/mm ²)	伸长率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (N/mm ²)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ cm/cm/°C (20~100°C)	导热度 Thermal Conductivity W/m·°C (100°C)
JIS	SUH 409L	≥175	≥360	≥25	≤80	0.46	200	11.7	24.9

铁素体 410L/410S FERRITE 410L/410S

产品特性 Features

410L: 属低C、低Cr的铁素体钢种，有磁性，不含Ni，具有低成本、价格稳定的优势，具有良好的加工性，焊接可靠性，热传导率高，热膨胀率低。

410S: 马氏体系系的代表钢种，因不含Ni，具低成本、价格稳定的优势，此钢种具有高强度和良好的加工性，但不适合于在产苛刻的腐蚀性环境下使用，经处理后可获得更高的硬度（有磁性）。

410L: Ferritic steel with low C and Cr contents, magnetic, low cost and stable price without Ni content, Good formability, weldability and bendability; High thermal conductivity and low coefficient of thermal expansion.

410S: Representative martensitic stainless steel, low cost and stable price without Ni content; Higher tensile strength and good formability, but not suitable in highly corrosive environment. Higher hardness can be obtained by heat treatment (magnetic).



产品用途 Application

410L: 因其优异性能，被广泛用于制作冷冻集热器、容器外壳、汽车排气管、热交换器、锅炉燃烧室、火炉等部件及喷嘴等。

410S: 因其较高的强度和硬度，被广泛的用于制造餐具、刀具及部分机械零部件等。

410L: Reeler container, Vessel housing, Automotive exhaust pipe, Heat-exchanger, Boiler combustion chamber, Burner component and Nozzle, etc.

410S: Kitchen utensils, Cutlery, some Mechanical components, etc.



成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

规范 Specification	钢种 Grade	主要化学成分(wt%) Chemical Composition (wt%)					
		C	Si	Mn	P	S	Cr
JIS	SUS 410L	≤0.03	≤1.00	≤1.00	≤0.040	≤0.030	11.50~13.50
JIS	SUS 410S	≤0.08	≤1.00	≤1.00	≤0.040	≤0.030	11.50~13.50

2. 机械性能及物理性能 Mechanical & Physical Properties

规范 Specification	钢种 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm ²)	抗拉强度 T.S. (N/mm ²)	伸长率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (N/mm ²)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ cm/cm/°C (20~100°C)	导热度 Thermal Conductivity W/m·°C (100°C)
JIS	SUS 410L	≥195	≥360	≥22	≤80	0.46	200	11.1	24.9
JIS	SUS 410S	≥205	≥410	≥20	≤80	0.46	200	10.8	24.9



奥氏体 L1 AUSTENITE L1

产品特性 Features

1. 节镍型奥氏体不锈钢。
2. 具有低成本、价格稳定的优势。
3. 比304有更高的强度和硬度。
4. 具有一般的延展性与成型加工性、无磁性。

1. Austenitic steel with low Ni content;
2. Enjoying advantages of low cost and stable price;
3. Higher tensile strength and hardness than 304;
4. Good elongation and formability, nonmagnetic.

产品用途 Application

作为一般情况下304的替代材料。适用于食品、家电、厨房用品及装饰装潢等多方面的领域。

1. 室内装饰：橱窗、壁板、家具、楼梯扶手等；
2. 厨房用品：餐具器皿、灶具面板等；
3. 其它方面：车内装饰、部分机械构件等。

Substitution for 304 in normal condition, widely used in food industry, electrical appliance, kitchen utensil, decoration and other aspects.

1. Interior Decoration: Show window, Wainscoting, Furniture, Stair hand-rail, etc;
2. Kitchen Utensil: Cookers, Gas cooker's panel, etc;
3. Others: Auto interior decoration, Mechanical components, etc.

成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

牌号 Specification	钢种 Grade	主要化学成分 (wt%) Chemical Composition (wt%)				
		C	Mn	Ni	Cr	Cu
L2	L1	≤0.15	8.00-10.50	1.00-3.00	13.50-16.00	≤2.00

2. 机械性能及物理性能 Mechanical & Physical Properties

牌号 Specification	钢种 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 Y.S. (N/mm ²)	抗拉强度 T.S. (N/mm ²)	延伸率 EL (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·°C)	弹性系数 Modulus of Elasticity (N/mm ²)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ cm/cm (°C) (20-100°C)	导热系数 Thermal Conductivity W/m (°C) (100°C)
L2	L1	≥205	≥515	≥35	≤99	0.8	191	15.3	16.3

其他注意事项

1. 本钢种之执行标准为集团（广州）不锈钢有限公司企业标准；依据奥氏体不锈钢已在欧洲（1431408）、俄罗斯（2246854）、中国（234391）、韩国（0552545）等地区取得发明专利。
2. L1为低镍的304替代钢种，其成分设计为Mn、Cu和N来取代Ni之奥氏体不锈钢，故其耐腐蚀性不及304钢种，但可以满足一般家庭或室内环境中的使用要求。
3. L1钢种的强度和硬度比304更高，故更能满足客户高强度的要求。
4. L1钢种的延展性和成型加工性良好，但在进行冲压加工时，建议进行中间退火处理，以防止时效脆化发生。
5. 利用不锈钢测定液，配合电解进行简易电解测试，根据电解液颜色的可辨别出含镍量不同的钢种。



Notes:

1. L2: the enterprise standard of LISCO; Austenitic steel with low Ni content has gotten the patent of invention in Europe (1431408), Russia (2246854), China (234391) and South Korea (0552545).
2. As a low-nickel substitution for 304, L1 increases the contents of Mn, Cu and N to replace part of Ni. Though the corrosion resistance of L1 is not as good as that of 304, it can meet the requirement of normal household and indoor usage.
3. With superior tensile strength and hardness to 304, L1 is a better material to meet the high-tensile strength requirement.
4. Good elongation and formability; but while drawing and stretching, annealing is suggested to prevent season cracking.
5. By electrolysis test, different grades with different Ni contents can be distinguished from the color of the liquid tested.





奥氏体 L4 AUSTENITE L4

产品特性 Features

1. 节能型奥氏体不锈钢。
2. 具有低成本、价格稳定的优势。
3. 在强度与成型加工等性质接近于304钢种。
4. 尤磁性且具有良好的延展性与成型加工性。
5. 具有良好的耐蚀性，普通腐蚀环境下可代替304钢种。

1. Austenitic steel with low Ni content;
2. Enjoying advantages of low cost and stable price;
3. Similar tensile strength and formability to 304;
4. Nonmagnetic, excellent elongation and formability;
5. Good corrosion resistance, substitution for 304 in normal corrosion environment.

产品用途 Application

- 做为一般在使用条件下304的替代钢种，适合于建筑工程、厨房家用、机械设备等多方面领域。
1. 建筑工程：壁板、楼梯电梯等；
 2. 厨房用品：餐具器皿、灶具面板、家电外板等；
 3. 其它方面：电子器械零部件、车辆的内外装饰、结构材料等。

Substitution for 304 in normal condition, widely used in construction, kitchen utensil, mechanical equipment, etc.

1. Architecture: Wainscoting, Stair, Elevator, etc.
2. Kitchen Utensil: Cookers, Cooker's panel, Outside plate of the household electrical appliances, etc.
3. Others: Components of electronic products, Auto interior and exterior panels, Structural materials, etc.

成分与性能 Chemical Composition & Properties

1. 化学成分 Chemical Composition

牌号 Specification	钢种 Grade	主要化学成分(Wt%) Chemical Composition (wt%)				
		C	Mn	Ni	Cr	Cu
LZ	L4	≤0.15	7.00~10.00	3.50~6.50	14.00~16.00	≤2.00

2. 机械性能及物理性能 Mechanical & Physical Properties

牌号 Specification	钢种 Grade	机械性能 Mechanical Property				物理性能 Physical Property			
		屈服强度 T.S. (N/mm ²)	抗拉强度 T.S. (N/mm ²)	延伸率 E _L (%)	硬度 Hardness (HRB)	比热 Specific Heat (J/g·C)	弹性系数 Modulus of Elasticity (KN/mm ²)	热膨胀系数 Coefficient of Heat Expansion 10 ⁻⁶ mm/m·C (20~100 C)	导热率 Thermal Conductivity W/m·C (100 C)
LZ	L4	≥205	≥510	≥35	≤95	0.5	191	15.3	15.8

其他注意事项

1. 本钢种之执行标准为联合（广州）不锈钢有限公司企业标准，该牌奥氏体不锈钢已在欧洲（1431408）、俄罗斯（2246554）、中国（234391）、韩国（0552545）等地区取得发明专利。
2. L4为低碳的304替代钢种，其成分设计为Mn和N来取代Ni之奥氏体不锈钢，故其耐蚀性不及304钢种，但优于L1，可在家庭室内等普通腐蚀环境下代替304钢种。
3. L4钢种在强度与成型加工等性质接近于304钢种，可满足客户相关成型需求。
4. L4钢种的延展性和成型加工性良好，可适合深冲或拉伸等加工等多方面用途。
5. 利用不锈钢测定液，配合电池进行简易电解测试，根据溶液电解后的颜色可辨别出含镍量不同的钢种。



Notes:

1. LZ: the enterprise standard of LISCO; Austenitic steel with low Ni content has gotten the patent of invention in Europe (1431408), Russia (2246554), China (234391) and South Korea (0552545).
2. As a low-nickel substitution for 304, L4 increases the contents of Mn, Cu and N to replace part of Ni. The corrosion resistance of L4 is not as good as that of 304, but better than that of L1. It can meet the requirement in normal corrosion environment such as household, indoor usage and so on.
3. Similar tensile strength and formability to 304, L4 can meet the requirement of formation.
4. Good elongation and formability; widely used for deep drawing, high-stretching and in other aspects.
5. By electrolysis test, different grades with different Ni contents can be distinguished from the color of the liquid tested.





完善的品质保证体系 PERFECT QUALITY ASSURANCE SYSTEM

和联锂点公司严格按ISO9001标准的要求，在进料、制程、出货、服务等各个环节均设置了周密的质量控制程序，所有产品实行100%检验，全程检验，确保为客户提供合格的优质产品。

Agag lithium sticks strictly to ISO9001 and sets up precise quality control system in material feeding, production process, delivery and service, etc. We carry out complete inspection to ensure qualified products.

我们的认证：

ISO 9001质量管理体系认证 ISO 14001环境管理体系认证 OHSAS 18001职业健康安全管理体系认证
ISO/TS 16949质量管理体系认证 ISO 10012测量管理体系认证 中华人民共和国特种设备制造许可证
AD&PED欧盟承压设备指令认证 CNAS中国合格评定国家认可委员会实验室认可

Our Certificates:

ISO 9001 ISO 14001 OHSAS 18001 ISO/TS 16949 ISO 10012 AD&PED CNAS
Manufacture License of Special Equipment People's Republic of China



ISO 14001

OHSAS 18001



ISO 9001

ISO/TS 16949



ISO10012



中华人民共和国特种设备制造许可证



AD&PED



CNAS



光谱分析仪
Optical Emission Spectrometer



磁谱分析仪
CTS Analyzer



拉力测试机
Tension tester



硬度计
Hardness tester



专业的科研技术团队 PROFESSIONAL SCIENTIFIC RESEARCH TEAM

“技术”是公司不断成长的基础。公司不但注重引进国际先进的生产设备、工艺和技术，也注重自身研发能力的提升和技术服务水平，能力的提高。在高素质技术团队的努力下，公司不但可以自主研发新的钢种，也可以对原有的生产制程，生产技术进行改善，从而让设备的实际生产能力远大于

设计能力，从原料进厂到成品出货，我们公司的每一个环节，每一个制程，每一个产品都受到严密的技术控制，从而确保为客户提供最优质的品质。除此之外，公司也充分利用自身的技术力量，积极为客户提拱产品运用等方面的技术咨询和技术支持。



Technology lays the foundation for LISCO's continuous growth. LISCO not only focuses on bringing in international advanced manufacturing equipment and technology, but also attaches great importance to improving its research and development ability as well as technical service. With the efforts of highly qualified technical team, LISCO not only can develop new steel grades by itself, but also can improve the manufacturing process and technique to make

overfulfillment of production capacity. From raw materials to finished products, we make strict technical control of all links, manufacturing procedures and products to ensure the best quality. In addition, we make full use of our knowledge and experience to provide customers with technical support in product application and other aspects.



产品种类及尺寸范围 STEEL GRADE AND SIZE RANGE

可产制产品种类 Steel Grade

材料牌号 Type	企业标准 QAL23XG	USCO's standard Q12BXG
节镍奥氏体型 Low-nickel austenitic	L1	
	L4	

材料牌号 Type	中国标准 China GB	日本标准 Japan JIS	美国标准 U.S.A. ASTM	欧洲标准 Europe EN
奥氏体型 Austenitic	06Cr19Ni10	SUS 304	304	1.4301
	022Cr19Ni10	SUS 304L	304L	1.4306
	-	SUS 304J1	-	-
	022Cr17Ni12Mo2	SUS 316L	316L	1.4404
	06Cr18Ni11Ti	SUS 321	321	1.4541
	06Cr25Ni20	SUS 310S	310S	1.4845
铁素体型 Ferritic	10Cr17	SUS 430	430	1.4016
	022Cr11Ti	SUH 409L	409L	1.4512
马氏体型 Martensitic	022Cr12	SUS 410L	410L	-
	06Cr13	SUS 410S	410S	1.4000

可产制尺寸范围 Size Range

产品名称 Product	厚度 Thickness (mm)	宽度 Width (mm)	说明 Remark
不锈钢扁钢带 SLB-S	180 - 250	800 - 1600	长度 Length: 5 - 13m
不锈钢圆钢 HRP-S	16.1 - 80	914 - 1600	长度 Length: 6 - 12.5m
热轧不锈钢扁钢卷 HRB-S	2.3 - 16	800 - 1600	最大卷重 Max coil weight: 25T
热轧不锈钢圆卷 (NO.1) HRC-S	2.3 - 10	800 - 1600	
冷轧不锈钢圆卷 (2D/2B) CRC-S	0.3 - 3.0	800 - 1600	



尺寸公差 DIMENSIONAL TOLERANCE

厚度公差 Thickness Tolerance

热轧不锈钢圆卷(NO.1) Hot Rolled Stainless Steel Sheet in Coil(NO.1 finish)

厚度 Thickness	JIS G4304-05 厚度公差 Thickness Tolerances(mm) (symbol ST)					
	宽度 Width(mm)					
	W < 1200		1200 < W < 1500		1500 < W < 1800	
	类别A	类别B	类别A	类别B	类别A	类别B
1 < 2.0	±0.22	±0.24	±0.25	±0.27	±0.27	±0.29
2.00 < t < 2.50	±0.23	±0.25	±0.27	±0.29	±0.30	±0.32
2.50 < t < 3.00	±0.26	±0.28	±0.29	±0.31	±0.31	±0.34
3.00 < t < 4.00	±0.29	±0.31	±0.31	±0.34	±0.34	±0.36
4.00 < t < 5.00	±0.31	±0.34	±0.34	±0.36	±0.36	±0.39
5.00 < t < 6.00	±0.34	±0.36	±0.36	±0.39	±0.38	±0.41
6.00 < t < 8.00	±0.38	±0.41	±0.39	±0.42	±0.40	±0.43
8.00 < t < 10.00	±0.42	±0.45	±0.43	±0.46	±0.44	±0.46

备注: 类别A: 除类别B以外的所有钢种

类别B: Ni > 20% 或 Mo > 2% 或 Ni > 0.11% 的不锈钢钢种

Remark: Category A: all grades except those covered by Category B Category B: stainless steel with Ni > 20% or Mo > 2% or Ni > 0.11%

冷轧不锈钢圆卷(2D/2B) Cold Rolled Stainless Steel Sheet in Coil(2D/2B finish)

公差 Tolerance	厚度 Thickness	宽度 Width	JIS G4305-05 厚度公差 Thickness Tolerances(mm)	
			W < 1250	1250 < W < 1600
0.20 < t < 0.60			±0.05	±0.08
0.60 < t < 0.80			±0.07	±0.09
0.80 < t < 1.00			±0.09	±0.10
1.00 < t < 1.25			±0.10	±0.12
1.25 < t < 1.60			±0.12	±0.15
1.60 < t < 2.00			±0.15	±0.17
2.00 < t < 2.50			±0.17	±0.20
2.50 < t < 3.00			±0.22	±0.25

宽度公差 Width Tolerance

刃口状态 Edge type	800 < W < 1000	1000 < W < 1524	1524 < W
轧边 Mill edge	-0/+25	-0/+30	-0/+30
切边 Cut edge	-0/+5	-0/+5	-0/+10



包装与标示 PACKAGING AND LABELING

鞍钢联众各项产品在出厂前均依本公司之标准或客户指定之包装方式予以包装, 以避免在搬运过程中遭受不必要之损伤。此外, 在产品的外包装上并刻以明确清晰的标示, 以便更好地识别产品的身份及相关规格资料。

Each product made by Aisgang Lianzhong is packaged in compliance with mill's standard or customer's request to avoid unnecessary damages that might be done to the coils during delivery. In addition, each product is clearly labeled on its external packing for easy identification and inspection.



■ 内销包装
Domestic Packaging

产品标签 Label Mark

鞍钢广州不锈钢有限公司 AISGANG LIANZHONG STEEL CO., LTD.	
品名	规格
表面	重量
成型	内径
尺寸	重量
重量	内径
内径	重量
重量	内径



■ 外销包装
Export Packaging

外销唛头 Shipping Mark

Customer Name
Serial Number
Invoice Number
Destination

订购须知 ORDER INSTRUCTION

订购须知 (全程为客户提供100%满意的服务) ORDER INSTRUCTION (100% satisfied service)

订购时, 请提供说明以下项目, 以便我方生产出符合客户要求的产品。
Please provide the following information to make sure we deliver the right product to you.

项目 Item	项目 Information
品名 Product	SLB-S, HRP-S, HRB-S, HRC-S, CRC-S
规格型号 Specification/Steel Grade	(示例 Sample) ASTM A240 / 304, AISI 304 / SUS304
表面处理 Surface Finish	BLACK, NO.1, NO.2D, NO.2B
成型级别 Forming Grade	DQ, DDQ
尺寸 Dimension	厚度×宽度 Thickness (mm) × Width (mm)
重量限制 Coil Weight (Min./Max.)	公吨 Metric ton
内径 Inner Diameter	500MM, 610MM, 750MM
内衬纸 Interleaf Paper	YES/NO
切边状态 Edge Type	轧边/切边 Mill Edge/Cut Edge
包装形式 Packaging Type	内销包装/外销包装 Domestic packaging/Export packaging
定购量 Order Volume	公吨 Metric ton
交货日期 Delivery Date	——年——月——日 Year——Month
用途 Application	再轧制, 一般用途, 容器, 冲压成型, 拉伸板, ... Re-rolling, General use, Vessel, Drawing, Forming, Polishing, ...
特殊要求 Special Requirements	化学成分, 尺寸公差 Chemical composition, Dimensional tolerance

备注: 公司产品代码及中英文对照
Remark: Abbreviation of Aisgang Lianzhong products

- | | |
|-------------------------|--|
| (A) SLB-S: 不锈钢卷板 | Stainless Steel Slab |
| (B) HRP-S: 热轧不锈钢板 | Hot Rolled Stainless Steel Plate |
| (C) HRB-S: 热轧不锈钢成卷 | Hot Rolled Stainless Steel Sheet in Coil-Black |
| (D) HRC-S: 热轧不锈钢(No.1)卷 | Hot Rolled Stainless Steel Sheet in Coil-NO.1 |
| (E) CRC-S: 冷轧不锈钢卷 | Cold Rolled Stainless Steel Sheet in Coil |