



 **燁聯鋼鐵股份有限公司**
YIEH UNITED STEEL CORP.



YU 304
YU 304L
YU 304J1
YU 316L
YU 301

- YU 304 (最廣泛使用的鋼種)
- YU 304L (具優良成形之鋼種)
- YU 304J1 (可替代304之節鎳型鋼種)
- YU 316L (高耐蝕性鋼種)
- YU 301 (高強度之節鎳型鋼種)

YU 304<最廣泛使用的鋼種>

YU 304 <The Most Widely Used Stainless Steel>

一、產品特性

1. 兼具優異的成形性及焊接性能。
容易透過不同加工程序而獲得最終成品，不論填料或非填料焊接皆容易獲得良好之焊接結果。
2. 兼具高耐蝕性及光亮表面。
透過化學成份設計，使 YU 304 產品兼具高耐蝕性及光亮表面之性質。
3. 最廣泛使用的不銹鋼鋼種。

二、應用

YU 304 鋼種因具光亮、潔淨表面、可耐大氣腐蝕且具優異的成形性及焊接性等性質，可廣泛用於食品容器、食品加工設備、建築結構、裝飾用板、運輸等，屬使用量及用途最多之不銹鋼。

三、規範:成份及機械性質皆符合 JIS SUS304、ASTM S30400 及 EN 1.4301 之要求。

III. Specifications: Chemical composition and mechanical property are all compliant with the standards of the JIS SUS304, ASTM S30400, and EN 1.4301.

I. Product Features

1. Superior formability and weldability
Via various process, the products can achieve excellent welding results with or without fillers.
2. High corrosion resistance and glossy surface
Via the design of the chemical compositions, grade YU 304 is featured with high corrosion resistance and glossy surface.
3. The most widely used stainless steel

II. Applications

Grade YU 304 is the most common used stainless steel. Featured with clean and glossy surface, excellent resistance to a wide range of atmosphere environment, and the excellent formability and weldability, Grade YU 304 is widely used for a variety of household and industrial applications such as food containers, food processing equipment, building structures, decorative panels, transportation, and other purposes.

1. 成份 Composition

鋼種 Grade	化學成份 Chemical Composition (wt%)				
	Ni	Cr	Mn	C	N
JIS SUS304	8.00~10.50	18.00~20.00	≤2.00	≤0.08	-
ASTM S30400	8.00~11.00	18.00~20.00	≤2.00	≤0.07	≤0.10
EN 1.4301	8.00~10.50	17.50~19.50	≤2.00	≤0.07	≤0.10
YU 30401	8.00~8.30	18.00~18.30	0.50~1.00	0.030~0.070	≤0.08

2.機械性質 Mechanical properties

鋼種 Grade	降伏強度 Yield Strength (MPa)	抗拉強度 Tensile Strength (MPa)	伸長率 Elongation (%)	硬度 Hardness (HRB)
JIS SUS304	≥ 205	≥ 520	≥ 40	≤ 90
ASTM S30400	≥ 205	≥ 515	≥ 40	≤ 92
EN 1.4301(H)	≥ 210	520~720	≥ 45	-
EN 1.4301(C)	≥ 230	540~750	≥ 45	-
YU 30401 (代表例 Typical)	297	671	54	84

四、物理性質 IV. Physical Properties

鋼種 Grade	密度 Density (g/cm ³)	熱膨脹係數 Thermal Expansion Coefficient (10 ⁻⁶ /°C)	熱導率 Heat Conductivity (W/m · °C)
		0~600°C	20°C
YU 304	7.9	18.7	15.0

五、耐蝕性

YU 304在一般的大氣及多數介質環境下
具優秀的耐蝕性。

V. Corrosion Resistance

YU 304 stainless steel has excellent resistance
under the atmosphere environment and many
kinds of corrosion mediums.

六、可接單產品、尺寸及表面品級

請與燁聯業務人員接洽。

VI. Available dimensions and surface finish

Please contact the sales representative
of Yieh United Steel Corp.

YU 304L〈具優良成形性鋼種〉

YU 304L 〈An Excellent Formability Stainless Steel〉

一、產品特性

1. 具優良的成形性。
容易透過不同加工程序而獲得最終成品。
2. 兼具高耐蝕性及光亮表面。
透過化學成份設計，使YU 304L 產品兼具高耐蝕性及光亮表面之性質。

二、應用

YU 304L 鋼種因具光亮、潔淨表面、可耐大氣腐蝕且具優異的成形性及焊接性等性質，可廣泛用於食品容器、食品加工設備、建築結構、裝飾用板、運輸等，屬使用量及用途最多之不銹鋼。

三、規範:成份及機械性質皆符合JIS SUS304、ASTM S30400/S30403及EN 1.4301/1.4307之要求。

III. Specifications:Chemical composition and mechanical property are all compliant with the standards of JIS SUS304, ASTM S30400/S30403, and EN 1.4301/1.4307.

1.成份 Composition

鋼種 Grade	化學成份 Chemical Composition (wt%)				
	Ni	Cr	Mn	C	N
ASTM S30403	8.00~12.00	18.00~20.00	≤2.00	≤0.030	≤0.10
EN 1.4307	8.00~10.50	17.50~19.50	≤2.00	≤0.030	≤0.10
YU 304L	8.00~8.30	18.00~18.30	0.50~1.60	≤0.030	0.030~0.075

I. Product Features

1. Excellent formability
Can be easily fabricated into the final products through different processes.
2. High corrosion resistance and glossy surface finish
Via the design of the chemical compositions, grade YU 304L is featured with high corrosion resistance and glossy surface.

II. Applications

Grade YU 304L is the most common used stainless steel. Featured with clean and glossy surface, excellent resistance to a wide range of atmosphere environment, and the excellent formability and weldability, Grade YU 304L is widely used for a variety of household and industrial applications such as food containers, food processing equipment, building structures, decorative panels, transportation, and other purposes.

2.機械性質 Mechanical properties

鋼種 Grade	降伏強度 Yield Strength (MPa)	抗拉強度 Tensile Strength (MPa)	伸長率 Elongation (%)	硬度 Hardness (HRB)
ASTM S30403	≥ 170	≥ 485	≥ 40	≤ 92
EN 1.4307(H)	≥ 200	520~700	≥ 45	-
EN 1.4307(C)	≥ 220	520~700	≥ 45	-
YU 304L (代表例 Typical)	302	640	52	84

四、物理性質 IV. Physical Properties

鋼種 Grade	密度 Density (g/cm ³)	熱膨脹係數 Thermal Expansion Coefficient (X10 ⁻⁶ /°C)	熱導率 Heat Conductivity (W/m · °C)
		0~600°C	20°C
304L	7.9	18.7	15.0

五、耐蝕性

在一般的大氣及多數介質環境下，YU 304L具優秀的耐蝕性。且因屬低碳設計，故不易於晶界形成碳化鉻析出而致耐蝕性下降，故對厚度約6mm以下之焊件皆無須施以焊後熱處理，且可取代一般304鋼種於425~860°C之敏化溫度範圍的長時間使用。

V. Corrosion Resistance

YU 304L is designed with excellent resistance under the atmosphere environment and many kinds of corrosion mediums. In addition, grade 304L stainless steel does not form chromium carbide easily at its intergranular areas which could decrease its corrosion resistance for containing low-carbon. Therefore, post-welding heat treatment is not necessary for parts with less than 6mm of thickness. Grade 304L stainless steel can also be used as a substitute for regular grade 304 stainless steel under the temperature range of 425~860°C for an extended period of time.

六、可接單尺寸及表面品級

請與燁聯業務人員接洽。

VI. Available dimensions and surface finish

Please contact the sales representative of Yieh United Steel Corp.

YU 304J1〈可替代 304 之節鎳型鋼種〉

YU 304J1 〈A Low-nickel Stainless Steel substitute for grade 304〉

一、產品特性

1. 機械性質與 SUS 304 相當。
透過添加銅及其他合金元素之調整，使 304J1 產品具有與 SUS 304 相當之機械性質。
2. 具成本優勢。
含鎳量略低於 SUS 304，較具成本的優勢。

二、應用

YU 304J1 鋼種因具適當的成形性及焊接性等性質，可廣泛用於餐廚鍋具、家電製品、建築裝飾等，屬多功能之新型材料，為一般 304 不銹鋼之理想替代品。

I. Product Features

1. Mechanical properties equivalent to SUS 304
Through copper added and other alloy adjustments, the mechanical properties of grade 304J1 stainless steel is quite similar to SUS304.
2. Cost advantage
Higher Cost-competitive than grade SUS304 stainless steel for containing less nickel.

II. Applications

YU 304J1 has proper formability, weldability and other features make it perfectly and widely adopted in kitchenware, home appliances, architectural decorations, etc. It is a versatile new material and an ideal substitute for grade 304 stainless steel.

三、規範:成份及機械性質皆符合 JIS 304J1 之要求。

III. Specifications: Conform with the JIS 304J1 in chemical composition and mechanical property.

1.成份 Chemical compositions

鋼種 Grade	化學成份 Chemical Composition (wt%)				
	Ni	Cr	Mn	Cu	C
JIS SUS 304	8.00~10.50	18.00~20.00	≤2.00	-	≤0.08
JIS SUS 304J1	6.00~9.00	15.00~18.00	≤3.00	1.00~3.00	≤0.08
YU 304J1 (代表例 Typical)	6.10	17.10	2.00	1.50	0.040

2.機械性質 Mechanical properties

鋼種 Grade	降伏強度 Yield Strength (MPa)	抗拉強度 Tensile Strength (MPa)	伸長率 Elongation (%)	硬度 Hardness (HRB)	n 值 n Value
SUS 304 (代表例 Typical)	291	665	56	84	0.46
JIS SUS 304J1	≥ 155	≥ 450	≥ 40	≤ 90	-
YU 304J1 (代表例 Typical)	277	617	58	79	0.45

304J1 延伸率及n值與一般 304 相當。

304J1 has similar elongation rate and n value with the grade 304 stainless steel.

四、物理性質 IV. Physical Properties

鋼種 Grade	密度 Density (g/cm ³)	熱膨脹係數 Thermal Expansion Coefficient (10 ⁻⁶ /°C)	熱導率 Heat Conductivity (W/m · °C)
		0~600°C	20°C
304J1	7.9	18.7	15.0

五、耐蝕性

因304J1之鉻含量略低於 304，故其耐蝕性略低於一般304鋼種。

V. Corrosion Resistance

Grade 304J1 stainless steel contains fewer chromium than grade 304, therefore, its corrosion resistance is slightly lower than the regular grade 304 stainless steel.

六、可接單產品、尺寸及表面品級

請與燁聯業務人員接洽。

VI. Available dimensions and surface finish

Please contact the sales representative of Yieh United Steel Corp.

YU 316L〈高耐蝕性鋼種〉

YU 316L 〈A High Corrosion Resistant Stainless Steel〉

一、產品特性

1. 具高耐蝕性性能。
因添加 2% 之鉬元素，使 316L 產品較一般 304/304L 具更高耐蝕性能。

二、應用

316L 鋼種因具光亮、潔淨表面、優異的成形性及焊接性且較一般 304/304L 鋼種耐腐蝕性更高等特性，可廣泛用於須較嚴苛腐蝕環境之食品容器、食品加工設備、建築、運輸等領域，為使用量及用途僅次於 304/304L 之 300 系不銹鋼。

I. Product Features

1. High corrosion resistance
With 2% molybdenum added, 316L stainless steel has better corrosion resistance than 304/304L.

II. Applications

With clean and glossy surface, superior formability and weldability, and as well as better corrosion resistance than grade 304/304L, grade 316L stainless steel can be widely used in harsh corrosive environments, such as food containers, food processing equipment, building, transportation, and other fields. It's the second largest in both consumption and application of 300 series.

三、規範: YU 316L1 同時符合 JIS SUS316、ASTM S31600/S31603 之要求。

YU 316L3 同時符合 JIS SUS316、ASTM S31600/S31603 及 EN 1.4401/1.4404 之要求。

III. YU 316L1 is conform with the standards of JIS SUS316 and ASTM S31600/S31603.

YU 316L3 is conform with the standards of JIS SUS316, ASTM S31600/S31603, and EN 1.4401/1.4404.

1. 成份 Chemical compositions

鋼種 Grade	化學成份 Chemical Composition (wt%)				
	Ni	Cr	Mn	C	N
ASTM S31603	10.00~14.00	16.00~18.00	2.00~3.00	≤0.030	≤0.10
EN 1.4404	10.00~13.00	16.50~18.50	2.00~2.50	≤0.030	≤0.10
YU 316L1	10.00~10.50	16.00~18.00	2.00~2.30	≤0.030	≤0.040
YU 316L3	10.00~10.50	16.50~17.50	2.00~2.30	≤0.030	≤0.040

2.機械性質 Mechanical properties

鋼種 Grade	降伏強度 Yield Strength (MPa)	抗拉強度 Tensile Strength (MPa)	伸長率 Elongation (%)	硬度 Hardness (HRB)
ASTM S31603	≥ 170	≥ 485	≥ 40	≤ 95
EN 1.4404(H)	≥ 220	530~680	≥ 40	-
EN 1.4404(C)	≥ 240	530~680	≥ 40	-
YU 316L1 (No.1代表例 Typical)	265	571	57	76
YU 316L3 (No.1代表例 Typical)	278	581	55	77

四、物理性質 IV. Physical Properties

鋼種 Grade	密度 Density (g/cm ³)	熱膨脹係數 Thermal Expansion Coefficient (10 ⁻⁶ /°C)	熱導率 Heat Conductivity (W/m · °C)
		0~600°C	20°C
316L	8.0	18.5	15.0

五、耐蝕性

在多數介質環境下，YU 316L1/316L3皆較一般304/304L具更優秀的耐蝕性。且因屬低碳設計，故不易於晶界形成碳化鉻析出而導致耐蝕性下降，故對厚度約6 mm以下之焊件皆無須施以焊後熱處理，且可取代一般316鋼種於425~860°C之敏化溫度範圍的長時間使用。

V. Corrosion Resistance

Under most medium, YU 316L1/316L3 are more corrosion-resistant than grade 304/304L stainless steel. In addition, it does not easily form chromium carbide at its intergranular areas which could decrease its corrosion resistance due to be with low-carbon content. Therefore, post-welding heat treatment is not necessary for parts with less than 6mm of thickness. It can also be used as a substitute for the regular grade 316 stainless steel under the temperature range of 425~860°C for an extended period of time.

六、可接單產品、尺寸及表面品級

請與燁聯業務人員接洽。

VI. Available dimensions and surface finish

Please contact the sales representative of Yieh United Steel Corp.

YU 301〈高強度節鎳型鋼種〉

YU 301 〈A High Strength Low-nickel Stainless steel〉

一、產品特性

1. 冷加工後可獲得高硬度及高強度。
可透過不同程度之冷間軋延，獲得1/4H、1/2H、3/4H及全硬板等不同硬度範圍之硬片。
2. 具成本優勢。
含鎳量略低於SUS 304，故具有較低的成本優勢。
3. 兼具高強度及光亮表面。
透過化學成份設計，使 301 產品兼具高強度及光亮表面之性質。

二、應用

301 鋼種因具光亮、潔淨表面、可耐大氣腐蝕且具高強度及適當的成形性等，可廣泛應用於鐵道及地鐵車輛、建築結構、裝飾用板、彈簧等，屬多功能之材料，為一般 304 不銹鋼之理想替代品。

三、規範:成份及機械性質皆符合 JIS SUS301 及 ASTM S30100 之要求。

III. Specifications: Conform with the JIS SUS301 and ASTM S30100 in chemical composition and mechanical property.

I. Product Features

1. High hardness and high strength after the cold working
Through different strength of cold rolling, various range of hard sheets of 1/4H, 1/2H, 3/4H and full hardness can be manufactured.
2. Cost advantage
With fewer nickel than grade SUS304 stainless steel, cost is more competitive.
3. High strength and glossy surface
Through adjustment of chemical compositions, grade 301 stainless steel performs higher strength and glossy surface.

II. Applications

With glossy surface, high corrosion resistant under the atmosphere environment, higher strength and proper formability, it can be widely used in railway tracks, subway, building structures, decorative panels, springs, and etc. It is a versatile material and an ideal substitute for grade 304 stainless steel.

1. 成份 Chemical compositions

鋼種 Grade	化學成份 Chemical Composition (wt%)				
	Ni	Cr	Mn	C	N
JIS SUS304	8.00~10.50	18.00~20.00	≦2.00	≦0.08	-
JIS SUS301	6.00~8.00	16.00~18.00	≦2.00	≦0.15	-
ASTM S30100	6.00~8.00	16.00~18.00	≦2.00	≦0.15	≦0.10
YU 301 (代表例 Typical)	6.80	17.20	0.90	0.10	0.05

2.機械性質 Mechanical properties

鋼種 Grade	降伏強度 Yield Strength (MPa)	抗拉強度 Tensile Strength (MPa)	伸長率 Elongation (%)	硬度 Hardness (HRB)
JIS SUS301	≥ 205	≥ 520	≥ 40	≤ 95
ASTM S30100	≥ 205	≥ 515	≥ 40	≤ 95
YU 301 (代表例 Typical)	313	928	51	91
YU 304 (代表例 Typical)	297	671	54	84

YU 301 強度高於一般SUS304。

Strength of YU301 is higher than the regular grade SUS304 stainless steel.

四、物理性質 IV. Physical Properties

鋼種 Grade	密度 Density (g/cm ³)	熱膨脹係數 Thermal Expansion Coefficient (10 ⁻⁶ /°C)	熱導率 Heat Conductivity (W/m·°C)
		0~600°C	20°C
301	7.9	18.7	15.0
304	7.9	18.7	15.0

五、耐蝕性

因301之鉻含量略低於304，故其耐蝕性略低於一般304鋼種；由於其碳含量較高，焊接時易發生碳化物析出而影響耐蝕性。

V. Corrosion Resistance

The corrosion resistance of 301 is slightly weaker than 304 because of lower Cr composition. Due to its higher carbon content, the welding process can cause carbide precipitation and negatively impact its corrosion resistance.

六、可接單產品、尺寸及表面品級

請與燁聯業務人員接洽。

VI. Available dimensions and surface finish

Please contact the sales representative of Yieh United Steel Corp.



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