

AISI Standard	301	303	304	304Cu
German material no.	1.4310	1.4305	1.4301	1.4567
DIN / EN number	EN 10088-3	EN 10088-3	EN 10088-3	EN 10088-3
Code	X 10 CrNi 18-8	X 8 CrNiS 18-9	X 5 CrNi 18-10	X 3 CrNiCu 18-9-4
Alloying components %	C ≤ 0.05-0.15 Mo ≤ 0.8 Cr 16.0-19.0 Ni 6.0-9.5	C ≤ 0.10 S ≤ 0.15-0.35 Cr 17.0-19.0 Ni 8.0-10.0	C ≤ 0.07 Cr 17.5-19.5 Ni 8.0-10.5	C ≤ 0.04 Cr 17.0-19.0 Ni 8.5-10.5 Cu 3.0-4.0
Minimum tensile strength Rm in N/mm²	500-750	500-700	500-700	450-650
Yield strength Rp_{0.2} in N/mm²	≥ 195	≥ 190	≥ 190	≥ 175
Machinability	Poor	Very good	Medium	Medium to good
Forgeability	Good	Poor	Good	Good
Weldability	Excellent	Poor	Excellent	Good
Special characteristics	Antimagnetic, austenitic structure usable as spring steel up to 572 °F (300 °C)	Antimagnetic, austenitic structure	Antimagnetic, austenitic structure suitable for low temperatures, can be used up to 1292 °F (700 °C)	Antimagnetic, austenitic structure suitable for cold forming
Corrosion resistance	Good However, sensitive to intercrystalline corrosion	Medium Due to the sulphur content reservations in environments which contain acids and chlorides	Good Corrosion resistant in natural environment: water, rural and urban atmospheres without significant chloride or acid concentrations, in food areas and in agricultural food areas	Good Corrosion resistant in natural environment: water, rural and urban atmospheres without significant acid concentrations, in food areas and in agricultural food areas.
Main application areas	Springs for temperatures up to 572 °F (300 °C), tools (knives), plates for vehicle construction, chemical and food industry	Vehicle construction, electronics, decorative purposes (kitchen equipment), mechanical engineering	Food industry, agriculture, chemical industry, vehicle construction, construction industry, mechanical engineering, decorative purposes (kitchen equipment)	Food industry, agriculture, chemical industry, mechanical engineering, shipbuilding, electronics, screw industry

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AISI Standard	316	316	316	316L
German material no.	1.4401 (A4)	1.4405 Precision casting	1.4408 Precision casting (A4)	1.4404 (A4, bar steel)
DIN / EN number	EN 10088-3	EN 10213-4	EN 10213-4	EN 10088-3
Code	X 5 CrNiMo 17-12-2	GX 4CrNiMo16-5-1	GX 5 CrNiMo 19-11-2	X 2 CrNiMo 17-12-2
Alloying components %	C ≤ 0.07 Cr 16.5-18.5 Ni 10.0-13.0 Mo 2.0-2.5	C ≤ 0.06 Cr 15.0-17.0 Ni 4.0-6.0	C ≤ 0.07 Cr 18.0-20.0 Ni 9.0-12.0 Mo 2.0-2.5	C ≤ 0.03 Cr 16.5-18.5 Ni 10.5-13.0 Mo 2.0-2.5
Minimum tensile strength Rm in N/mm²	500-700	760	440-650	500-700
Yield strength Rp_{0.2} in N/mm²	≥ 200	≥ 540	≥ 185	≥ 200
Machinability	Medium	Poor to medium	Medium	Medium
Forgeability	Good	-	-	Good
Weldability	Good	Good	Good	Excellent
Special characteristics	Antimagnetic, austenitic structure suitable for low temperatures, can be used up to 1112 °F (600 °C)	Magnetic, martensitic structure	Antimagnetic, austenitic structure	Antimagnetic, austenitic structure suitable for low temperatures, can be used up to 1292 °F (700 °C)
Corrosion resistance	Very good Significantly higher than AISI 304 in natural environmental mediums and moderate chlorine and salt concentrations, however not resistant to ocean water	Medium Corrosion resistant, reservations apply particularly in the case of environments with exposure to acid and salt	Very good Acid resistant	Very good Significantly higher than AISI 304 in natural environmental mediums and moderate chlorine and salt concentrations, however not resistant to ocean water
Main application areas	Chemical industry, food industry, mechanical engineering, building industry	Pumps, valves, parts for hydropower engineering	Food industry, chemical industry, fittings, pumps, mechanical engineering	Vehicle construction, chemical industry, food industry, medical / pharmaceutical industry, building industry

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AISI Standard	316LHC	316Ti	431	440C
German material no.	1.4404 Sintered material	1.4571 (A4)	1.4057	1.4125
DIN / EN number	Sint C40	EN 10088-3	EN 10088-3	EN 10088-3
Code	X 2 CrNiMo 17-13-2	X 6 CrNiMoTi 17-12-2	X 17 CrNi 16-2	X 105 CrMo 17
Alloying components %	C ≤ 0.08 Mo 2.0-4.0 Cr 16.0-19.0 Ni 10.0-14.0	C ≤ 0.08 Mn ≤ 2.0 Cr 16.5-18.5 Ni 10.5-13.5 Mo 2.0-2.5 Ti ≤ 5xC max. 0.7	C ≤ 0.12-0.22 Cr 15.0-17.0 Ni 1.5-2.5	C ≤ 0.95-1.2 Cr 16.0-18.0
Minimum tensile strength Rm in N/mm²	330	500-700	800-950	750-1500
Yield strength Rp_{0.2} in N/mm²	≥ 250	≥ 175	≥ 600	-
Machinability	-	Medium to poor	Poor	Poor to medium
Forgeability	-	Medium	Medium	-
Weldability	-	Good	Good	Poor
Special characteristics	Antimagnetic structure	Antimagnetic, austenitic structure suitable for low temperatures, can be used up to 1292 °F (700 °C), high strength even at high temperatures	Magnetic, martensitic structure for construction parts with high strength, can be used up to 752 °F (400 °C)	Magnetic, martensitic structure, thoroughly heat treatable, high wear resistance
Corrosion resistance	Medium By virtue of its coarser porosity the corrosion resistance is in general reduced compared with stainless steel, reservations especially in acid and salty environment	Very good Comparable with AISI 316L	Good However, sensitive to intercrystalline corrosion	Medium Fresh water, oil, gasoline, alcohol, dairy products
Main application areas	Paint, oil, soap and textile industry, electronics, Decorative purposes (kitchen equipment)	Equipment and pipeline construction, chemical industry, food industry, medical / pharmaceutical industry, shipbuilding	Vehicle construction, chemical industry, aviation, mechanical engineering, food industry	Blades, surgical cutting instruments, ball bearings, valves

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AISI Standard	630	CF-8
German material no.	1.4542	1.4308 Precision casting (A2)
DIN / EN number	EN 10088-3	EN 10213-4
Code	X 5 CrNiCuNb 16-4	GX 5CrNi 19-10
Alloying components %	C ≤ 0.07 Cr 15.0-17.0 Ni 3.0-5.0 Cu 3.0-5.0 Nb min. 5xC-0.45	C ≤ 0.07 Cr 18.0-20.0 Ni 8.0-11.0
Minimum tensile strength Rm in N/mm²	800-1200	440-640
Yield strength Rp_{0.2} in N/mm²	500-1000	≥ 175
Machinability	Poor to medium	Medium
Forgeability	Good	-
Weldability	Good	Good
Special characteristics	Magnetic, martensitic structure, suitable for low temperatures, can be used up to 842 °F (450 °C)	Antimagnetic, austenitic structure
Corrosion resistance	Good Comparable with AISI 304, insensitive to intercrystalline corrosion	Good Corrosion resistant, material is largely comparable with AISI 304
Main application areas	Shipbuilding, food industry, construction engineering, automotive industry, chemical industry, plant construction	Food industry, beverage industry, packaging industry, fittings, pumps, agitators

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