

AISI Standard	431	304	303	CF-8 Precision casting
<b>German Material No.</b>	1.4057	1.4301	1.4305	1.4308
<b>DIN / EN-Number</b>	EN 10088-3	EN 10088-3	EN 10088-3	EN 10213-4
<b>Symbol</b>	X 17 CrNi 16-2	X 5 CrNi 18-10	X 8 CrNiS 18-9	GX 5CrNi 19-10
<b>Alloying components %</b>	C ≤ 0,12 ... 0,22 Cr 15,0 ... 17,0 Ni 1,5 ... 2,5	C ≤ 0,07 Cr 17,5 ... 19,5 Ni 8,0 ... 10,5	C ≤ 0,10 S ≤ 0,15 ... 0,35 Cr 17,0 ... 19,0 Ni 8,0 ... 10,0	C ≤ 0,07 Cr 18,0 ... 20,0 Ni 8,0 ... 11,0
<b>Minimum tensile strength Rm in N/mm<sup>2</sup></b>	800 ... 950	500 ... 700	500 ... 700	440 ... 640
<b>Yield strength Rp0,2 in N/mm<sup>2</sup></b>	≥ 600	≥ 190	≥ 190	≥ 175
<b>Machinability</b>	poor	medium	very good	medium
<b>Forgeability</b>	medium	good	poor	–
<b>Weldability</b>	good	excellent	poor	good
<b>Special characteristics</b>	magnetic, martensitic structure for elements with high stability, can be used up to 400 °C	antimagnetic, austenitic structure suitable for low temperatures, can be used up to 700 °C	antimagnetic, austenitic structure	antimagnetic, austenitic structure
<b>Corrosion resistance</b>	good  however, sensitive to intercrystalline corrosion	good  resistant to corrosion, in the natural environment: water, rural and urban atmospheres without significant chloride or acid concentrations, in food areas and in agricultural food areas	medium  due to the sulphur content reservations in environments which contain acids and chlorides	good  resistant to corrosion, Material is largely comparable with AISI 304
<b>Main areas of application</b>	Vehicle construction Chemical industry Aviation Machine construction Food industry	Food industry Agriculture Chemical industry Vehicle construction Construction industry Machine construction Decorative purposes (Kitchen equipment)	Vehicle construction Electronics Decorative purposes (Kitchen equipment) Machine construction	Food industry Beverage industry Packaging industry Fittings Pumps Agitators

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AISI Standard	301	316	316 LHC Sintered Material	316 L (A4, bar steel)
<b>German Material No.</b>	1.4310	1.4401 (A4)	1.4404	1.4404 (A4)
<b>DIN / EN-Number</b>	EN 10088-3	EN 10088-3	Sint C40	EN 10088-3
<b>Symbol</b>	X 10 CrNi 18-8	X 5 CrNiMo 17-12-2	X 2 CrNiMo 17-13-2	X 2 CrNiMo 17-12-2
<b>Alloying components %</b>	C ≤ 0,05 ... 0,15 Mo ≤ 0,8 Cr 16,0 ... 19,0 Ni 6,0 ... 9,5	C ≤ 0,07 Cr 16,5 ... 18,5 Ni 10,0 ... 13,0 Mo 2,0 ... 2,5	C ≤ 0,08 Mo 2,0 ... 4,0 Cr 16,0 ... 19,0 Ni 10,0 ... 14,0	C ≤ 0,03 Cr 16,5 ... 18,5 Ni 10,5 ... 13,0 Mo 2,0 ... 2,5
<b>Minimum tensile strength R<sub>m</sub> in N/mm<sup>2</sup></b>	500 ... 750	500 ... 700	330	500 ... 700
<b>Yield strength R<sub>p0,2</sub> in N/mm<sup>2</sup></b>	≥ 195	≥ 200	≥ 250	≥ 200
<b>Machinability</b>	poor	medium	–	medium
<b>Forgeability</b>	good	good	–	good
<b>Weldability</b>	excellent	good	–	excellent
<b>Special characteristics</b>	antimagnetic, austenitic structure usable as spring steel up to 300 °C	antimagnetic, austenitic structure suitable for low temperatures, can be used up to 600 °C	antimagnetic structure	antimagnetic, austenitic structure suitable for low temperatures, can be used up to 700 °C
<b>Corrosion resistance</b>	good  however, sensitive to intercrystalline corrosion	very good  significantly higher than AISI 304 in natural environmental mediums and moderate chlorine and salt concentrations, however not resistant to ocean water	medium  by virtue of its coarser porosity the corrosion resistance is in general reduced as compared with Stainless Steel, reservations especially in acid and salty environment	very good  significantly higher than AISI 304 in natural environmental mediums and moderate chlorine and salt concentrations, however not resistant to ocean water
<b>Main areas of application</b>	Springs for temperatures up to 300 °C Tools (knives) Plates for vehicle construction Chemical and food industry	Chemical industry Food industry Machine construction Building industry	Paint, oil, soap and textile industry Electronics Decorative purposes (Kitchen equipment)	Vehicle construction Chemical industry Food industry Medical / Pharmaceutical industry Building industry

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AISI Standard	316	630	304 Cu	316 Ti (A4)
<b>German Material No.</b>	1.4408	1.4542	1.4567	1.4571 (A4)
<b>DIN / EN-Number</b>	EN 10213-4	EN 10088-3	EN 10088-3	EN 10088-3
<b>Symbol</b>	GX 5 CrNiMo 19-11-2	X 5 CrNiCuNb 16-4	X 3 CrNiCu 18-9-4	X 6 CrNiMoTi 17-12-2
<b>Alloying components %</b>	C ≤ 0,07 Cr 18,0 ... 20,0 Ni 9,0 ... 12,0 Mo 2,0 ... 2,5	C ≤ 0,07 Cr 15,0 ... 17,0 Ni 3,0 ... 5,0 Cu 3,0 ... 5,0 Nb min. 5xC ... 0,45	C ≤ 0,04 Cr 17,0 ... 19,0 Ni 8,5 ... 10,5 Cu 3,0 ... 4,0	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
<b>Minimum tensile strength Rm in N/mm<sup>2</sup></b>	440 ... 650	800 ... 1200	450 ... 650	500 ... 700
<b>Yield strength Rp<sub>0,2</sub> in N/mm<sup>2</sup></b>	≥ 185	500 ... 1000	≥ 175	≥ 175
<b>Machinability</b>	medium	poor ... medium	medium ... good	medium ... poor
<b>Forgeability</b>	-	good	good	medium
<b>Weldability</b>	good	good	good	good
<b>Special characteristics</b>	antimagnetic, austenitic structure	antimagnetic, austenitic structure hardenable (precipitation hardening) suitable for low temperatures, can be used up to 450 °C	antimagnetic, austenitic structure suitable for cold forming	antimagnetic, austenitic structure suitable for low temperatures can be used up to 700 °C, high stability even at high temperatures
<b>Corrosion resistance</b>	very good acid-resistant	good Corrosion resistance comparable with AISI 304, insensitive to intergranular corrosion	good resistant to corrosion in the natural environment: water, rural and urban atmospheres without significant acid concentrations, in food areas and in agricultural food areas.	very good comparable with 316 L
<b>Main areas of application</b>	Food industry Chemical industry Fittings Pumps Machine construction	Shipbuilding Food industry Construction engineering Automotive industry Chemical industry Plant construction	Food industry Agriculture Chemical industry Machine construction Shipbuilding Electronics Screw industry	Equipment and pipeline construction Chemical industry Food industry Medical / Pharmaceutical industry Shipbuilding

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