

TECHNICAL DATA

10.11 Stainless Steel characteristics

AISI Standard	431 (A4)	304	303	CF-8 Precision casting
German Material No.	1.4057 (A4)	1.4301	1.4305	1.4308
DIN / EN-Number	EN 10088-3	EN 10088-3	EN 10088-3	EN 10213-4
Symbol	X 17 CrNi 16-2	X 5 CrNi 18-10	X 8 CrNiS 18-9	GX 5CrNi 19-10
Alloying components %	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
Minimum tensile strength Rm in N/mm ²	800 ... 950	500 ... 700	500 ... 700	440 ... 640
Yield strength Rp0.2 in N/mm ²	≥ 600	≥ 190	≥ 190	≥ 175
Machinability	poor	medium	very good	medium
Forgeability	medium	good	poor	–
Weldability	good	excellent	poor	good
Special characteristics	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
Corrosion resistance	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
Main areas of application	<ul style="list-style-type: none"> – Vehicle construction – Chemical industry – Aviation – Machine construction – Food industry 	<ul style="list-style-type: none"> – Food industry – Agriculture – Chemical industry – Vehicle construction – Construction industry – Machine construction – Decorative purposes (Kitchen equipment) 	<ul style="list-style-type: none"> – Vehicle construction – Electronics – Decorative purposes (Kitchen equipment) – Machine construction 	<ul style="list-style-type: none"> – Food industry – Beverage industry – Packaging industry – Fittings – Pumps – Agitators

The characteristics described should be treated as guidelines only. No guarantee is made. The exact conditions of use have to be taken into account individually.