

PROPERTIES OF METAL MATERIALS STAINLESS STEELS

Description	AISI 303	AISI 304+Cu	AISI 304	AISI 316	AISI 316 LHC	AISI 301	AISI 302	AISI CF-8
Designation in accordance with EN 10088-1-2-3 EN 10283 (AISI CF-8) SINT C40 (AISI 316 LMC)	X 8 CrNiS 18-9	X 3 CrNiCu 18-9-4	X 5 CrNi 18-10	X 5 CrNiMo 17-12	Sint C40 X 2 CrNiMo 17-12-2	EN 100088-1;-2;-3 X10CrNi 18-8	X 10 CrNi 18-09	EN 10283 GX5CrNi 19-10
% components of alloy	C ≤ 0.10 Si ≤ 1.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.15 ÷ 0.35 Cr 17.0 ÷ 19.0 Ni 8.0 ÷ 10.0	C ≤ 0.04 Si ≤ 1.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.030 Cr 17.0 ÷ 19.0 Ni 8.5 ÷ 10.5	C ≤ 0.07 Si ≤ 1.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.030 Cr 17.0 ÷ 19.5 Ni 8.0 ÷ 10.5	C ≤ 0.08 Si ≤ 1.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.030 Cr 16.0 ÷ 18.5 Ni 10.0 ÷ 13.0	C ≤ 0.08 Si ≤ 0.9 Mn ≤ 0.1 Mo ≤ 2.0 ÷ 4.0 Cr 16.0 ÷ 19.0 Ni 10.0 ÷ 14.0	C ≤ 0.05 ÷ 0.15 Si ≤ 2.0 Mn ≤ 2.0 P ≤ 0.045 S ≤ 0.015 Cr 16.0 ÷ 19.0 Mo ≤ 0.8 Ni 6.0 ÷ 9.5	C ≤ 0.08 Si ≤ 0.6 Mn ≤ 1.2 Cr 18.0 Ni 9.0	C ≤ 0.07Si ≤ 2.0 Si ≤ 1.5 Mn ≤ 1.5 P ≤ 0.04 S ≤ 0.03 Cr 18.0 ÷ 20.0 Ni 8.0 ÷ 11.0
Minimum load at breakage Rm N/mm ²	500 - 700	450 - 650	500 - 700	500 - 700	330	500 - 750	600 - 800	440 - 640
Yield point Rp 0.2 n/mm ²	≥ 190	≥ 175	≥ 190	≥ 205	≥ 250	≥ 195	≥ 210	≥ 175
Machinability	Very good	Excellent	Fair	Fair	-	Poor	Good	Medium
Forgeability	Poor	Good	Good	Good	-	Good	Poor	-
Suitability for welding	Poor	Very good	Excellent	Good	-	Good	Poor	Good
Special features	Non-magnetic structure Excellent for machining on automatic machines	Non-magnetic structure suitable for low temperatures	Non-magnetic structure suitable for low temperatures may be used at up to 700 °C	Magnetic structure suitable for low temperatures	Non-magnetic structure	Austenitic structure	Magnetic structure suitable for low temperatures	Antimagnetic, austenitic structure
Corrosion resistance	Fair Due to sulphur content, use in environments containing acids or chlorides should be avoided.	Very good Resistant to corrosion in natural environments: water, urban or country climates with no significant concentrations of chlorides, in the food industry.	Good Resistant to corrosion in natural environments: water, urban or country climates with no significant concentrations of chlorides, in the food industry.	Excellent Resistant to corrosion also in marine environments or wet environments and in the presence of acids.	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.	Good Corrosion resistant in a natural environment; water, rural, urban and industrial atmosphere.	Fair	Good Corrosion resistant. Material is to a large extent comparable with AISI 304
Main fields of application	Construction of vehicles. Electronics. Furniture finishings.	Food, chemical and pharmaceutical industries. Agriculture. Construction of machines. Electronics. Shipping. Furniture finishings	Food, chemical and pharmaceutical industries. Agriculture. Construction of vehicles and machines. Building. Furniture finishings.	Food and chemical industries. Ship building and manufacture of components for marine environments or use in highly corrosive conditions.	Chemical, cellulose and paper industry. Paint, oil, soap and textile industry. Daires. Breweries.	Springs for temperature up to 300 °C. Tools (knives). Sheet metal for vehicles automotive industry. Chemical and food industry.	Used for the manufacture of springs in various fields of application.	Food, beverage and packing industry. Armatures. Pumps. Mixers.

The characteristics described should be treated as guidelines only. No guarantee is made.
The user is responsible for checking the exact operating conditions.