

SINOXX[™] 4541, 4878

AUSTENITIC STAINLESS STEELS

SINOXX 4541 is a chromium-nickel austenitic stainless steel with outstanding resistance to intergranular corrosion. The addition of titanium stabilizes the steel against the formation of chromium carbides. It exhibits strength characteristics superior to SINOXX 4301 and can be used at temperatures up to 900 °C.

SINOXX 4878 is a modified version of SINOXX 4541 with increased strength at high temperatures due to its higher carbon content. Given their similar composition and characteristics, stainless steel SINOXX 4541 and SINOXX 4878 can become dually certified.

APPLICATIONS

- Chemical and petrochemical processing
- Exhaust systems
- Piping
- Furnace parts
- Heat exchangers
- Pressure vessels
- Pharmaceutical production

SPECIFICATIONS

SIJ	AISI	UNS	EN	Standards
SINOXX 4541	321	S32100	1.4541	ASTM A240/A240M, ASME SA240/SA240M, EN 10088-1, EN 10088-2, EN 10088-3, EN 10088-4, EN 10028-7, EN 10095
SINOXX 4878	321H	S32109	1.4878	

CHEMICAL COMPOSITION [wt. %]

	C	Mn	P	S	Si	Cr	Ni	Ti
SINOXX 4541	0.045	1.8	0.035	0.0010	0.35	17.3–17.6	9.1–9.4	Ti=5.0(C+N)min.
SINOXX 4878	0.050	1.6	0.035	0.0010	0.35	17.0–17.3	9.0–9.3	Ti=5.0(C+N)min.

PHYSICAL PROPERTIES

Density [g/cm ³]	Specific heat [J/kgK]*	Thermal conductivity [W/mK]*	Electrical resistivity [Ωmm ² /m]*	Magnetisation
7.9	500	15	0.73	No

* values at 20 °C in accordance with EN 10088-1

MECHANICAL PROPERTIES

0.2 % Yield strength min. [MPa]	Tensile strength [MPa]	Elongation min. [%]	Hardness max. [HB]	Impact Charpy V, 20 °C min. [J]
200	500–700	40	217	100

GRAIN SIZE

The average grain size of SINOXX 4878 is no. 7 or coarser, in accordance with ASTM E112.

CORROSION RESISTANCE

SINOXX 4541 and SINOXX 4878 are alloyed with titanium, which enhances their resistance to intergranular corrosion, even at increased temperatures. They are characterized by significant resistance to nitric acid and nitric acid salts in high concentrations. SINOXX 4878 is the slightly higher carbon version of SINOXX 4541. It was developed for applications requiring enhanced creep resistance in aggressive media at high temperatures.

Grade	Tested per the following corrosion standards
SINOXX 4541	ASTM A262 Practice A, ASTM A262 Practice E, EN ISO 3651-2 Method A
SINOXX 4878	

HOT FORMING

The hot forming temperature ranges between 950 °C and 1200 °C (1742–2192 °F).

HEAT TREATMENT

SINOXX 4541: Solution annealing at 1040 °C (1904 °F), followed by rapid cooling.

SINOXX 4878: Solution annealing at 1100 °C (2012 °F), followed by rapid cooling.

SURFACE FINISH

Plates are supplied in pickled condition (bright surface) – 1D / No. 1 Finish.

DIMENSIONS

SINOXX 4541/4878	Thickness [mm]	Max. width [mm]	Max. length [mm]	Max. weight [kg]
Quarto plates	7.0–8.0 (0.28–0.31 in.)	2000 (78.74 in.)	12000 (472.44 in.)	9600 (21164 lbs)
Quarto plates	8.0–130.0 (0.31–5.11 in.)	2500 (98.43 in.)	12000 (472.44 in.)	9600 (21164 lbs)

The information and data in this product data sheet are intended for informative purpose only and may be revised at any time without notice. Presented typical properties of the materials are described only to help readers make their own evaluations and decisions. They are not guaranteed.