

SINOXX^{...} 4845

HIGH TEMPERATURE AUSTENITIC STEEL

SINOXX 4845 is standardised high-temperature stainless steel for use at temperatures up to 1100 °C in dry air. The steel can also be used under conditions of slightly oxidising atmosphere, cementation and sulphuring as well as with thermal cycles, there temperature must be reduced. This grade is also prone to embrittlement after exposure between 600 °C and 900 °C.

APPLICATIONS

- furnaces – burners, piping and recuperators, doors
- cryogenic components
- oil burners parts
- heat exchangers
- ore processing/steel plants

SPECIFICATIONS

High temperature austenitic steel is designated as AISI 310s, UNS S31008 and EN 1.4845, and conforms to the following standards:

- ASTM A 240/A240M - 14
- EN 10095

CHEMICAL COMPOSITION

Typical values [wt. %]

	C	Mn	P	S	Si	Cr	Ni	Al	N	Cu
Min.	0.04	-	-	-	-	24.00	19.00	-	-	-
Max.	0.06	1.60	0.040	0.002	0.60	24.50	19.50	0.015	0.09	0.50

PHYSICAL PROPERTIES

Density	Specific heat	Thermal conductivity	Electrical resistivity
7.9 g/cm ³	500 J/kgK*	15 W/mK*	0.85 Ωmm/m*

* values at 20 °C according to EN 10088-1

MECHANICAL PROPERTIES

Minimum guaranteed values of mechanical test requirements, for the specified thickness range.

Thickness [mm]	0.2 % Yield strength min. [MPa]	Tensile strength min. [MPa]	Elongation min. [%]	Hardness max. [HB]	Impact Charpy V, 20 °C [J]*
8–100	205	515	40	192	250–350

* typical value

MICROSTRUCTURE

The microstructure of SINOXX 4845 is austenitic, with average grain size no. 5, according to ASTM E112. The typical microstructure is shown in *Figure 1*.

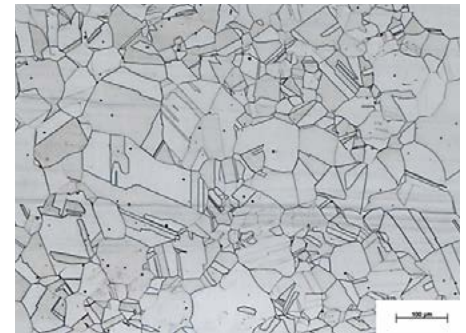


Figure 1: Austenitic microstructure

CORROSION RESISTANCE

SINOXX 4845 is mainly used at high temperatures due to its corrosion resistance. After long period of exposure to high temperature, it can become susceptible to intergranular corrosion due to precipitation of chromium carbides. In an atmosphere with maximum sulphur content of 2 g/m³, the typical working temperature is 1050 °C. When the content of sulphur is higher than 2 g/m³, the typical working temperature is up to 950 °C.

HOT FORMING

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

HEAT TREATMENT

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

PICKLING

Plates are supplied in pickled condition (bright surface).

DIMENSIONS

SINOXX 4845	Thickness [mm]	Max. width [mm]	Max. length [mm]	Max. weight [kg]
Quarto plates	8–10 (0.31–0.39 in.)	2000 (78.74 in.)	12000 (472.44 in.)	9600 (21164 lbs)
Quarto plates	10–100.0 (0.39–3.94 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.