

Material Data Sheet

1.4835(X9CrNiSiNce21-11-2)

Austenitic heat-resistant stainless steel

Short description 1.4835 or 253 MA is a heat-resistant austenitic chromium-nickel steel for high-temperature applications. It is similar to 1.4828, but has a higher nitrogen content and a rare earth element (cerium) alloy. 1.4835 is scale-resistant in air up to approximately 1100°C.

Standards and Designations	EN	1.4835
	DIN	X9CrNiSiNce21-11-2
	AISI	253 MA
	UNS	S30815

Chemical Composition

	C (Carbon)	Mn (Mangan)	Si (Silicium)	P (Phosphor)	S (Sulfur)	Cr (Chrome)	Ni (Nickel)	N (Nitrogen)	Ce (Cer)
min.	0,05	-	1,4	-	-	20,0	10,0	0,12	0,03
max.	0,12	1,0	2,5	0,045	0,015	22,0	12,0	0,20	0,08

Special Features

Heat-resistant (application range up to approx. 1150°C)
Scale-resistant up to 1100°C in air

Corrosion resistance

1.4835 or 253 MA – like other austenitic heat-resistant chromium-nickel steels – exhibits only low resistance to oxidizing and reducing sulfur-containing gases. This is due to its relatively high carbon and nitrogen content. The material 1.4835 is scale-resistant up to 1100°C in dry air. However, the temperature range of 600°C – 900°C should be avoided, as these temperatures can lead to grain disintegration and a concomitant negative impact on the notched bar impact values at room temperature.

Mechanical Properties at 20°C

Hardness HB	Yield strength Rp0,2 N / mm ²	Tensile strength Rm N / mm ²	Stretching A5,65	Elastic modulus kN / mm ²
≤ 210	≥ 310	650 - 850	≥ 40%	200

BANKVERBINDUNGEN

OLDENBURGER VOLKSBANK
IBAN DE98 2806 1822 0065 3616 00
BIC GENODEF1EDE

LZO RASTEDE
IBAN DE07 2805 0100 0043 3308 93
BIC SLZODE22XXX

OLB RASTEDE
IBAN DE54 2802 0050 1443 1738 00
BIC OLBODEH2XXX

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Weldability 1.4835 can be welded using all common welding processes. Preheating prior to welding and post-welding heat treatment are not necessary. If multiple layers are being welded, the workpiece should be allowed to cool to approximately 150°C before welding the next layer.

Application areas Apparatus construction for high-temperature applications, chemicals, petrochemicals, chain industry, power plant construction, hardening accessories, furnace construction, soot blowers

Physical Properties at 20°C

Density kg/dm ³	Electrical resistance (ohm) mm ² /m	Magnetizability	Thermal conductivity W/m K	Specific heat capacity J/kg K
7,8	0,85	unavailable	15	500

Processing

Cold forming	yes
Cold heading	yes
Polishability	yes
Open-die and drop forging	yes
Machining	yes

Thermal treatment

Hot forming	1150 - 900°C
Solution annealing (+AT)	1020 - 1120°C (Cooling: water or air)
Stress relieving	900°C (Duration: at least 30 minutes)

Notice The values and information listed above regarding the properties and/or usability of the material are for informational purposes only. This information is based on the manufacturer's experience. All information is provided without guarantee. Subject to printing errors, mistakes, and changes.