



DAIKOWT 310Mo

GTAW

SUPERAUSTENITIC STEELS
310

DESCRIPTION

Rod for stainless steel with 25% Cr-20% Ni-2% Mo

The chemical composition has been meticulously adjusted to suit specific applications within urea plants, particularly for joints and cladding next to steels that match or resemble them. Identified as a modified austenitic stainless steel of type 310L, it incorporates low levels of carbon and silicon, along with high levels of nitrogen to reinforce and stabilize the austenitic phase. Additionally, its composition, rich in chromium, molybdenum, and nitrogen, provides exceptional resistance in corrosive wet conditions.

SPECIFICATIONS

EN ISO 14343-A	W 25 22 2 N L	AWS A5.9	(ER310Mo)
Certifications	CE	Shielding	11
Positions	PA, PB, PC, PD, PE, PF	Current	DC-
Packaging Type	5kg carton tube		

ASME QUALIFICATIONS

PREN

HARDNESS

F-No (QW432)	6	26.33	85HRB
A-No (QW442)	-		

CHEM. COMP. %

DEFAULT

MECHANICAL PROPERTIES

MIN. PER STANDARD

PRODUCT

C	0.1	Tensile strength R _m MPa	550	560
Mn	4.5	Yield strength R _{p0.2} MPa	350	360
Ni	22	Elongation A (L ₀ =5d ₀) %	20	40
Cr	25	Impact Charpy ISO-V	-	50J @ -196°C
N	0.14	Impact Charpy ISO-V	-	-
P	0.02			
		WELDING PARAMETERS	1.6 mm	2.4 mm
S	0.005	Ampere	80A - 100A	110A - 160A
Mo	0.1	Voltage	-	-
Si	0.13	Packaging	Ø 1,0÷4,0 mm	Ø 1,0÷4,0 mm
Cu	0.1	Packaging Type	5kg carton tube	5kg carton tube





310

DESCRIPTION

SUPERAUSTENITIC STEELS

310

APPLICATION

The product is primarily used for welding 25% Cr-20% Ni (310) alloys, which can be wrought or cast, and contain up to 0.25% carbon. To ensure maximum resistance to cracking and microfissures during solidification, the manganese content in the welding metal is increased to 2-5%. The high alloy content of type 310 provides excellent oxidation resistance up to maximum temperatures of about 1200 °C, making it ideal for heat shields, furnace components, and ducts. These consumables are also suitable for mixed welds and dissimilar joints, including those where PWHT application is necessary. However, it is important to consider that the relatively high thermal expansion coefficient may cause thermal fatigue in transition joints subjected to thermal cycling. In such situations, the use of nickel-based consumables is generally recommended. Further applications include cushioned layers and overlays. The fully austenitic welding metal is suitable for specialized applications requiring low magnetic permeability (typically <1.01). Additionally, 310 welding metals intrinsically withstand temperatures down to -196 °C, making them suitable for cryogenic installations. Preheating is not necessary. It is preferable to maintain the interpass temperature below 150 °C and heat input below 1.5 kJ/mm; this is crucial especially for processes with high heat input, such as SAW.

ALLOY TYPE

25%Cr-20%Ni (310) stainless steel.

MICROSTRUCTURE

Fully austenitic.

MATERIALS

EN W. N.: 1.4826 (GX40CrNiSi22-10), 1.4828 (X15CrNiSi2012), 1.4837 (GX40CrNiSi25-12), 1.4840 (GX15CrNi2520), 1.4841 (X15CrNiSi25-21), 1.4846 (X 40 CrNi 25-21), 1.4847 (X 8 CrNiAlTi 20-20), 1.4848 GX40CrNiSi25-20), 1.4335 (X1CrNi25-21), 1.4435 (X2CrNiMo18-14-3), 1.4446 (X1CrNiMoN22-25-3), 1.4547 (X3CrNiMoTi25-25)

ASTM: 310, 310S, CK20, 305, 314, 725LN, 316L

UNS: S31000, S31008, S31050, S31603

