# TIG 20/10NB

*Old reference*: TIG 347

## Classification

| | | | | | |
|---|---|---|---|---|---|
| AWS A5.9 | : | ER347 | ISO 14343-A | : | W 19 9 Nb |
| AMS | : | 5680 | AIR 9117 | : | Z10 CNNb 18-11 |

## Description & Applications

Solid rod for GTAW of stainless steels stabilised with Niobium like 347, with Titanium like 321 or low carbon content stainless steels like 304L and controlled Carbon content like 304H. Good intergranular resistant corrosion.

**Main applications:** Aeronautical industry, petrochemistry, power plant.

**Base materials:**

**Stainless steels for general use and for high temperature applications:**

| *UNS* | *Alloy* | *EN 10088* | *Material N°* |
|---|---|---|---|
| S30409 | 304H | X6CrNi18-11 | 1.4948 |
| S30400 | 304 | X5CrNi18-10 | 1.4301 |
| S32100 | 321 | X6CrNiTi18-10 | 1.4541 |
| | | X10CrNiTi18-10 | 1.6903 |
| | | X10CrNi18-8 | 1.4310 |
| S30403 | 304L | X2CrNi19-11 | 1.4306 |

## Typical Chemical Composition ( % )

| | C | Si | Mn | Cr | Ni | Mo | Cu | Nb | P | S | Co | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | | 0.30 | 1.0 | 19.0 | 9.0 | | | 12 x C | | | - | - |
| Max | 0.07 | 0.65 | 2.0 | 20.0 | 11.0 | 0.5 | 0.5 | 1.0 | 0.03 | 0.02 | - | - |
| Type | 0.045 | 0.40 | 1.5 | 19.4 | 9.3 | 0.10 | 0.10 | 0.60 | 0.02 | 0.01 | 0.06 | 0.06 |

## All Weld Metal Mechanical Properties

| | $R_{p0.2}$ ( MPa ) | $R_m$ ( MPa ) | $A_5$ ( % ) | KV ( J ) | |
|---|---|---|---|---|---|
| Min | 350 | 550 | 30 | - | - |
| Max | | | | - | - |
| Type | 490 | 660 | 35 | +20°C | 140 |

## Welding Current & Instructions

| Welding mode | Shielding Gas |
|---|---|
| TIG<br>= - | ISO 14175 :<br>I1 (Ar) 6-12 l/min<br>Back shielding: I1 (Ar) / N1 (Nitrogen) : 3-6 l/min |

Back shielding with Argon or Nitrogen gas or with copper backing support to avoid “back end” rust phenomena.