

# CEWELD NiCrMo 686 CPT

**TYPE** Nickel-Chromium-Molybdenum based alloy for gas metal arc welding

**APPLICATIONS** CEWELD® NiCrMo 686 CPT is particularly valuable in operating environments where general corrosion resistance and resistance to hydrochloric acid or sulfuric acid, crevice corrosion in hot, concentrated acid chloride solutions, NaCl solutions saturated with sulfur dioxide, and oxidizing chloride solutions are required. In addition, it is resistant to intergranular corrosion and sensitization-induced intergranular corrosion in highly oxidizing environments. CEWELD® NiCrMo 686 CPT is also suitable for overlay welding of alloys of types 625, C276, C4, C22, and 59, as well as for welding super duplex and super austenitic steels. Applications include the chemical and petrochemical industries, the application of corrosion-resistant coatings and valve seat inserts, and flue gas desulfurization plants. Properties: CEWELD® E NiCrMo 686 CPT weld metal is exceptionally resistant to pitting corrosion.

**PROPERTIES** CEWELD® NiCrMo 686 CPT is a single-phase, austenitic Ni-Cr-Mo-W alloy with excellent corrosion resistance. Its high nickel (Ni) and molybdenum (Mo) content ensures good resistance under reducing conditions, while the high chromium (Cr) content provides resistance to oxidizing media. Molybdenum and tungsten contribute to resistance to localized corrosion, such as pitting. The iron (Fe) content is carefully controlled to optimize properties. A low carbon content helps to minimize precipitation at grain boundaries, thereby maintaining corrosion resistance in the heat-affected zones of welded joints. It is important to maintain a maximum heat input of 1.5 kJ/mm and a maximum intermediate temperature of 100 °C.

**CLASSIFICATION**

|        |                                 |
|--------|---------------------------------|
| AWS    | A 5.14: ERNiCrMo-14             |
| EN ISO | 18274: S Ni 6686 (NiCr21Mo16W4) |
| W.Nr.  | ~2.4606                         |
| F-nr   | 43                              |
| FM     | 6                               |

**SUITABLE FOR** **ENiCrMo-14, E Ni 6686 NiCr21Mo16W4**  
2.4602, 2.4605, 2.4606, 2.4607, 2.4610, 2.4819, 2.4656, 1.4529, 1.4547, 1.4565  
NiCr23Mo16, NiCr23Mo16Al, NiCr21Mo16W, NiMo16Cr15Ti, NiMo16Cr16Ti, NiCr21Mo14W, NiMo16Cr15W, NiCr22Mo9Nb, Alloy 59, Alloy C4, Alloy 276, X1NiCrMoCuN25-20-7, X1CrNiMoCuN20-18-7  
**ASTM:** C-4, C-276, C-22, 625, 904hMo  
**UNS:** N06059, N06455, N10276, N06625, N08925, S31254, N06686, N06022, N06059, N06200, N08367, N08926, N08031  
Duplex, Superduplex, super austenitic stainless steel, Nickel Alloys, N06059, N06022, Hastelloy C276, Alloy C22, Alloy 59. Inconel 622, 625, 686, Outokumpu 654 SMO, Incoloy® Alloy 25-6MO, 27-7MO (Special Metals)

**APPROVALS**

**WELDING POSITIONS**



**TYPICAL CHEMICAL ANALYSIS OF THE FILLER METAL (%)**

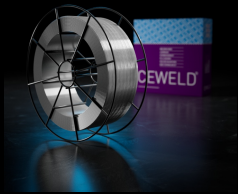
| C    | Si   | Mn  | P     | S     | Cr | Ni | Mo | Ti  | Fe  | W   | Cu   | Al   |
|------|------|-----|-------|-------|----|----|----|-----|-----|-----|------|------|
| 0.03 | 0.06 | 0.3 | 0.002 | 0.001 | 21 | 58 | 16 | 0.1 | 0.8 | 3.5 | 0.01 | 0.23 |

**MECHANICAL PROPERTIES**

| Heat Treatment | R <sub>P0.2</sub> (MPa) | R <sub>m</sub> (MPa) | A <sub>5</sub> (%) | Impact Energy (J) ISO-V |        | Hardness |
|----------------|-------------------------|----------------------|--------------------|-------------------------|--------|----------|
|                |                         |                      |                    | RT                      | -196°C |          |
| As Welded      | 450                     | 760                  | 40                 | 100                     | 80     | HRC      |

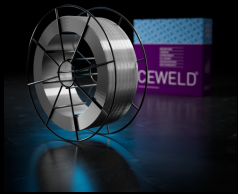
**REDRYING** Not required

**GAS ACC. EN ISO 14175** I1, I3



# CEWELD NiCrMo 686 CPT

**certilas**<sup>®</sup> THE FILLER METAL SPECIALIST



# CEWELD NiCrMo 686 CPT

NICRMO 686 CPT 0,8MM

| Packaging | KG/unit | EanCode       |
|-----------|---------|---------------|
| BS-300    | 15      | 8720663419484 |

NICRMO 686 CPT 1,0MM

| Packaging | KG/unit | EanCode       |
|-----------|---------|---------------|
| BS-300    | 15      | 8720663419507 |

NICRMO 686 CPT 1,14MM

| Packaging | KG/unit | EanCode       |
|-----------|---------|---------------|
| BS-300    | 13,6    | 8720663419521 |

NICRMO 686 CPT 1,6MM

| Packaging | KG/unit | EanCode       |
|-----------|---------|---------------|
| BS-300    | 15      | 8720663419538 |