

Inconel 601 Welding Wire (UNS N06601) — Technical Data Sheet

ERNiCrFe-11 / ENiCrFe-11 filler metals for welding Inconel 601 — values are AWS minimum requirements; the purchase specification governs.

Chemical Composition (AWS A5.14, ERNiCrFe-11)

Element	Content
Nickel + Cobalt (Ni + Co)	58.0% min.
Chromium (Cr)	21.0–25.0%
Aluminium (Al)	1.0–1.7%
Iron (Fe)	Remainder
Carbon (C)	0.10% max.
Phosphorus (P)	0.03% max.
Manganese (Mn)	1.00% max.
Silicon (Si)	0.50% max.
Copper (Cu)	1.00% max.
Sulphur (S)	0.015% max.

Minimum All-Weld-Metal Mechanical Properties (AWS)

Product (all-weld metal)	Tensile Strength	Yield Strength	Elongation
ERNiCrFe-11 bare wire (AWS A5.14)	≥94 ksi (648 MPa)	Not classified by AWS	≥40%
ENiCrFe-11 electrode (AWS A5.11)	≥94 ksi (648 MPa)	Not classified by AWS	≥40%

Filler Metal Classifications

Product	AWS Class	Key Composition	Typical Strength	Best Suited For
Bare wire	ERNiCrFe-11 (A5.14) / S Ni6601	Ni 58.0 min%, Cr 21.0–25.0%, Al 1.0–1.7%	≥94 ksi (648 MPa)	GTAW primary, GMAW conditional
Covered electrode	ENiCrFe-11 (A5.11)	Same core wire with basic covering	≥94 ksi (648 MPa)	SMAW field repair and fabrication

Physical Properties (Approx.)

Property	Value
Filler Metal	ERNiCrFe-11 (Alloy 601)
UNS	N06601
ISO Designation	S Ni6601
DIN Designation	SG-NiCr23Al (W.Nr. 2.4626)
Classification	AWS A5.14 / ASME SFA-5.14 / ASME IX F-No. 43

Standards and Designations

Standard	Product / Application
AWS A5.14	ERNiCrFe-11 bare nickel-chromium-iron welding wire
AWS A5.11	ENiCrFe-11 covered welding electrode
ASME SFA-5.14	ASME version of the bare filler specification
ASME SFA-5.11	ASME version of the covered electrode specification
ASME Section IX	F-No. 43 procedure qualification for ERNiCrFe-11
UNS N06601	Designation for the ERNiCrFe-11 filler metal
ISO 18274	S Ni6601 nickel filler wire and rod
DIN 1736	SG-NiCr23Al (W.Nr. 2.4626) welding filler
BS 2901 NA 49	British filler wire designation

Surface Finishes

Surface Condition	Typical Characteristics / Applications
Clean Bright	Standard finish for bare ERNiCrFe-11 wire; not copper-coated
Spool Wound	Layer-wound for smooth GMAW feeding where conditions allow
Straight Rods	Cut TIG rods with clean deburred ends
Sealed Packs	Covered electrodes sealed against moisture pickup

Typical Supply Dimensions — Welding Wire

Product Form	Typical Supply	Length
TIG Filler Rod (GTAW)	1.6 / 2.4 / 3.2 mm × 1000 mm	5 kg tube
MIG Wire (GMAW)	0.9 / 1.14 mm	Spool
Straight Cut Wire	0.8–3.2 mm dia.	Straight lengths
Covered Electrode (SMAW)	2.4 / 3.2 mm	Sealed pack
Custom Winding	To drawing	Custom

Values are for reference; the mill test certificate prevails for final acceptance. Dimensions, heat-treatment conditions, and surface finishes are confirmed at quotation.

Southerly Alloy — nickel alloy bar, rod, pipe, tube, plate and fittings · www.southerly-alloy.com · Values are for reference; the mill test certificate prevails for final acceptance.

Document Control · Inconel 601 Welding Wire Data Sheet · Rev. 1.0 · Issued 29 September 2026