

Incoloy 825 Welding Wire (UNS N08825 / W.Nr. 2.4858) — Technical Data Sheet

ERNiFeCr-1 bare wire to AWS A5.14 (UNS N08065) and ENiCrMo-3 covered electrodes to AWS A5.11 (UNS W86112) for joining UNS N08825 — the ERNiFeCr-1 deposit carries the acid resistance of the parent metal into the weld, while the niobium-bearing electrode suits 825-to-stainless and 825-to-steel joints; neither class needs a post-weld heat treatment.

Chemical Composition — Filler base-metal reference (the deposit is certified to AWS A5.14 / A5.11)

Element	Content
Nickel (Ni)	38.0–46.0%
Chromium (Cr)	19.5–23.5%
Iron (Fe)	22.0% min.
Molybdenum (Mo)	2.5–3.5%
Copper (Cu)	1.5–3.0%
Titanium (Ti)	0.6–1.2%
Carbon (C)	0.05% max.
Manganese (Mn)	1.00% max.
Silicon (Si)	0.50% max.
Aluminium (Al)	0.20% max.
Sulfur (S)	0.03% max.

Filler Mechanical Minimums (AWS classifications)

Product (all-weld metal)	AWS Class	Minimum Tensile Strength	Minimum Elongation
ERNiFeCr-1 bare wire	AWS A5.14, UNS N08065	≥552 MPa (80 ksi)	25%
ENiCrMo-3 covered electrode	AWS A5.11, UNS W86112	≥758 MPa (110 ksi)	30%

Filler Metal Classifications

Product	AWS Class	Key Composition	Typical Strength	Best Suited For
Bare wire	ERNiFeCr-1 (A5.14) / S Ni 8065	Ni 38.0–46.0%, Cr 19.5–23.5%, Mo 2.5–3.5%, Cu 1.5–3.0%	≥552 MPa (80 ksi) AWS min	GTAW primary, GMAW general
Covered electrode	ENiCrMo-3 (A5.11) / ENi 6625	Ni+Co 55.0 min%, Cr 20.0–23.0%, Mo 8.0–10.0%, Nb+Ta 3.15–4.15%	≥758 MPa (110 ksi) AWS min	SMAW repair and dissimilar joints

Filler Metal Identification (ERNiFeCr-1 / ENiCrMo-3)

Property	Value
Filler Metal	ERNiFeCr-1 (AWS A5.14)
Covered Electrode	ENiCrMo-3 (AWS A5.11)
UNS	N08065 (bare) / W86112 (covered)
ISO Designation	S Ni 8065 (bare) / ENi 6625 (covered)
Other Designations	BS 2901 NA41 (bare) / DIN 2.4621 (covered)
Chromium Window	19.5–23.5% (bare) / 20.0–23.0% (covered)
Molybdenum	2.5–3.5% (bare) / 8.0–10.0% (covered)
Copper or Niobium + Tantalum	Cu 1.5–3.0% (bare) / Nb+Ta 3.15–4.15% (covered)
Nickel	38.0–46.0% (bare) / Ni+Co 55.0% min. (covered)

Standards and Designations

Standard	Product or Application
AWS A5.14	ERNiFeCr-1 bare filler wire, UNS N08065
AWS A5.11	ENiCrMo-3 covered electrode, UNS W86112
ASME SFA-5.14	ASME version of the bare filler specification

Surface Finishes (Welding Wire)

Surface Condition	Typical Use
Clean Bright	The standard surface for bare ERNiFeCr-1 welding wire, free of drawing lubricant.
Spool Wound	Layer-wound welding wire so the GMAW feeder runs without tangling.
Straight Rods	Cut TIG rods of this welding wire with clean, deburred ends.

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 / 1.2 mm	Spool
SAW Wire and Strip	2.5–4.0 mm dia.	Coil
Straight Cut Wire	0.8–3.2 mm dia.	Straight lengths
Covered Electrode (SMAW)	2.4 / 3.2 / 4.0 mm	Sealed pack
Custom Winding	To drawing	Custom

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