

Monel K-500 Welding Wire (UNS N05500) — Technical Data Sheet

ERNiCu-7 bare wire to AWS A5.14 and ENiCu-7 covered electrodes to AWS A5.11 for joining UNS N05500 and N04400 — figures are typical published all-weld-metal values; the deposit cannot be aged, so joint design must allow for the strength gap.

Chemical Composition — Base Metal UNS N05500 (the deposit is certified to AWS A5.14 / A5.11)

Element	Content
Nickel (Ni) plus Cobalt (Co)	63.0% min.
Copper (Cu)	27.0–33.0%
Aluminium (Al)	2.30–3.15%
Titanium (Ti)	0.35–0.85%
Iron (Fe)	2.0% max.
Manganese (Mn)	1.5% max.
Carbon (C)	0.18% max.
Silicon (Si)	0.50% max.
Sulfur (S)	0.010% max.

Typical All-Weld-Metal Mechanical Properties (AWS)

Product (all-weld metal)	Tensile Strength	Yield Strength (0.2%)	Elongation
ERNiCu-7 bare wire (AWS A5.14)	Approx. 530 MPa (77 ksi), typical	Approx. 360 MPa (53 ksi), typical	Approx. 34%, typical
ENiCu-7 covered electrode (AWS A5.11)	480–550 MPa (70–80 ksi), typical	310–380 MPa (45–55 ksi), typical	30–45%, typical

Filler Metal Classifications

Product	AWS Class	Key Composition	Typical Strength	Best Suited For
Bare wire	ERNiCu-7 (A5.14) / S Ni 4060	Ni+Co 62.0–69.0%, Cu balance, Ti 1.5–3.0%	Approx. 530 MPa (77 ksi)	GTAW primary, GMAW general
Covered electrode	ENiCu-7 (A5.11) / E Ni 4060	Same nickel-copper core with a basic covering	Approx. 480–550 MPa (70–80 ksi)	SMAW repair and field work

Filler Metal Identification (ERNiCu-7 / ENiCu-7)

Property	Value
Filler Metal	ERNiCu-7 (AWS A5.14)
Covered Electrode	ENiCu-7 (AWS A5.11)
UNS	N04060 (bare) / W82140 (covered)
ISO Designation	S Ni 4060 / E Ni 4060 (NiCu30Mn3Ti)
Copper Content	Remainder, roughly 27–34%
Titanium Addition	Approx. 1.5–3.0% (bare wire)

Standards and Designations

Standard	Product or Application
AWS A5.14	ERNiCu-7 bare nickel-copper filler wire
AWS A5.11	ENiCu-7 covered nickel-copper electrode
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 ERNiCu-7 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
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. Dimensions, heat-treatment conditions, and surface finishes are confirmed at quotation.
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