

Incoloy 800 / 800H / 800HT Welding Wire (UNS N08800 / N08810 / N08811) — Technical Data Sheet

ERNiCr-3 bare wire to AWS A5.14 (UNS N06082) and ENiCrFe-3 covered electrodes to AWS A5.11 (UNS W86182) for joining UNS N08800, N08810 and N08811 — AWS sets 550 MPa (80 ksi) minimum tensile at 30% minimum elongation on both classes; the manganese window of ENiCrFe-3 caps its creep service at about 480 °C.

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

| Element              | Alloy 800 (UNS N08800) | Alloy 800H (UNS N08810) | Alloy 800HT (UNS N08811) |
|----------------------|------------------------|-------------------------|--------------------------|
| Nickel (Ni)          | 30.0–35.0%             | 30.0–35.0%              | 30.0–35.0%               |
| Chromium (Cr)        | 19.0–23.0%             | 19.0–23.0%              | 19.0–23.0%               |
| Iron (Fe)            | 39.5% min.             | 39.5% min.              | 39.5% min.               |
| Carbon (C)           | 0.10% max.             | 0.05–0.10%              | 0.06–0.10%               |
| Aluminium (Al)       | 0.15–0.60%             | 0.15–0.60%              | 0.25–0.60%               |
| Titanium (Ti)        | 0.15–0.60%             | 0.15–0.60%              | 0.25–0.60%               |
| Aluminium + Titanium | 0.30–1.20%             | 0.30–1.20%              | 0.85–1.20%               |
| Copper (Cu)          | 0.75% max.             | 0.75% max.              | 0.75% max.               |
| Manganese (Mn)       | 1.50% max.             | 1.50% max.              | 1.50% max.               |
| Silicon (Si)         | 1.00% max.             | 1.00% max.              | 1.00% max.               |
| Sulfur (S)           | 0.015% max.            | 0.015% max.             | 0.015% max.              |
| Annealed Grain Size  | Not specified          | ASTM 5 or coarser       | ASTM 5 or coarser        |

Filler Mechanical Minimums (AWS classifications)

| Product (all-weld metal)    | AWS Class             | Minimum Tensile Strength | Minimum Elongation |
|-----------------------------|-----------------------|--------------------------|--------------------|
| ERNiCr-3 bare wire          | AWS A5.14, UNS N06082 | ≥550 MPa (80 ksi)        | 30%                |
| ENiCrFe-3 covered electrode | AWS A5.11, UNS W86182 | ≥550 MPa (80 ksi)        | 30%                |

Filler Metal Classifications

| Product           | AWS Class                    | Key Composition                             | Typical Strength             | Best Suited For            |
|-------------------|------------------------------|---------------------------------------------|------------------------------|----------------------------|
| Bare wire         | ERNiCr-3 (A5.14) / S Ni 6082 | Ni 67.0 min%, Cr 18.0–22.0%, Nb+Ta 2.0–3.0% | ≥550 MPa (80 ksi)<br>AWS min | GTAW primary, GMAW general |
| Covered electrode | ENiCrFe-3 (A5.11) / ENi 6182 | Ni+Co 59.0 min%, Cr 13.0–17.0%, Mn 5.0–9.5% | ≥550 MPa (80 ksi)<br>AWS min | SMAW repair and field work |

Filler Metal Identification (ERNiCr-3 / ENiCrFe-3)

| Property           | Value                                    |
|--------------------|------------------------------------------|
| Filler Metal       | ERNiCr-3 (AWS A5.14)                     |
| Covered Electrode  | ENiCrFe-3 (AWS A5.11)                    |
| UNS                | N06082 (bare) / W86182 (covered)         |
| ISO Designation    | S Ni 6082 (bare) / ENi 6182 (covered)    |
| DIN W.Nr.          | 2.4806 (bare) / 2.4807 (covered)         |
| Chromium Window    | 18.0–22.0% (bare) / 13.0–17.0% (covered) |
| Niobium + Tantalum | 2.0–3.0% (bare) / 1.0–2.5% (covered)     |
| Manganese          | 2.5–3.5% (bare) / 5.0–9.5% (covered)     |

Standards and Designations

| Standard      | Product or Application                         |
|---------------|------------------------------------------------|
| AWS A5.14     | ERNiCr-3 bare nickel-iron-chromium filler wire |
| AWS A5.11     | ENiCrFe-3 covered 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 ERNiCr-3 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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