



NIMONIC[®] 80A

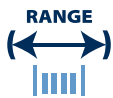
Key Features

- Largely superseded by Nimonic 90 & Inconel X-750
- Still specified for nuclear applications due to low cobalt content
- Age hardenable
- ^^High temperature dynamic applications

IMPORTANT

We will manufacture to your required mechanical properties.

key advantages to you, *our customer*



0.025mm to 21mm
(.001" to .827")



Order 3m to 3t
(10 ft to 6000 Lbs)



Delivery:
within 3 weeks



Wire to your spec



E.M.S available



Technical support

NIMONIC[®] 80A available in:-

- Round wire
- Bars or lengths
- Flat wire
- Shaped wire
- Rope/Strand

Packaging

- Coils
- Spools
- Bars or lengths



*Trade name of Special Metals Group of Companies.

NIMONIC® 80A



| Chemical Composition | | | Specifications | Key Features | Typical Applications |
|----------------------|-------|--------|--|---|---|
| Element | Min % | Max % | ASTM B637 BS 3076 NA 20 BS HR 1 BS HR 601 Designations W.Nr. 2.4952 W.Nr. 2.4631 UNS N07080 AWS 031 | Largely superseded by Nimonic 90 & Inconel X-750 Still specified for nuclear applications due to low cobalt content Age hardenable ^^High temperature dynamic applications | Gas turbine components Nuclear industry Fasteners |
| C | 0.04 | 0.10 | | | |
| Si | - | 1.00 | | | |
| Mn | - | 1.00 | | | |
| S | - | 0.015 | | | |
| Ag | - | 0.0005 | | | |
| Al | 1.00 | 1.80 | | | |
| B | - | 0.008 | | | |
| Bi | - | 0.0001 | | | |
| Co | - | 2.00 | | | |
| Cr | 18.00 | 21.00 | | | |
| Cu | - | 0.20 | | | |
| Fe | - | 1.50 | | | |
| Pb | - | 0.002 | | | |
| Ti | 1.8 | 2.70 | | | |
| Ni | BAL | | | | |

| | | |
|---------------------------------|----------------------------|---|
| Density | 8.19 g/cm ³ | 0.296 lb/in ³ |
| Melting Point | 1365 °C | 2490 °F |
| Coefficient of Expansion | 12.7 µm/m °C (20 – 100 °C) | 7.1 x 10 ⁻⁶ in/in °F (70 – 212 °F) |
| Modulus of Rigidity | 85 kN/mm ² | 12328 ksi |
| Modulus of Elasticity | 222 kN/mm ² | 32199 ksi |

| Heat Treatment of Finished Parts | | | | | |
|-------------------------------------|------------|-------------|------|-----------|---------|
| Condition as supplied by Alloy Wire | Type | Temperature | | Time (Hr) | Cooling |
| | | °C | °F | | |
| Annealed | Age Harden | 700 | 1290 | 16 | Air |
| Spring Temper | Age Harden | 600 | 1110 | 16 | Air |

| Properties | | | | |
|----------------------|--------------------------|-----------|---|------------|
| Condition | Approx. tensile strength | | Approx. operating temperature depending on load^^ and environment | |
| | N/mm ² | ksi | °C | °F |
| Annealed | <1000 | <145 | - | - |
| Annealed + Aged | 1200 – 1400 | 174 – 203 | up to 550 | up to 1020 |
| Spring Temper | 1300 – 1500 | 189 – 218 | - | - |
| Spring Temper + Aged | 1500 – 1800 | 218 – 261 | up to 350 | up to 660 |

The above tensile strength ranges are typical. If you require different please ask.

^^Dynamic applications = active/lively/changing