BH DÖVME METAL SANAYİ ve TİCARET LTD. ŞTİ.
Hatip Mah. Viawest 5 Sanayi Sitesi
Gündüz Sefası Sok. No:8/11, İç Kapı: E-11
Çorlu/Tekirdağ
info@bhmetal.com.tr
www.bhmetal.com.tr

Grade	W.Nr.	UNS	Nickel Alloys
Nimonic 80A	2.4952 / 2.4631	N07080	

Nickel Alloy Properties

Nimonic 80A / Alloy 80A is a precipitation-hardenable nickel-based superalloy that can retain its mechanical strength at elevated temperatures. Its main characteristics are good tensile and fatigue strength at high temperature, strong creep resistance under long-term load, and high resistance to oxidation and scaling. After age-hardening heat treatment, its strength increases significantly; therefore, it maintains better dimensional stability under demanding service conditions where temperature, pressure and continuous mechanical load act together. In short, Nimonic 80A / Alloy 80A is a special nickel alloy used where high-temperature strength, oxidation resistance and long-term mechanical performance are required together.

Chemical Analysis (Nimonic 80A, Alloy 80A)

Ni %	Cr %	C %	S %	Mn %	Si %	Ti %	Co %	Al %	Cu %	Fe %	B %	P %
65.00 min.	18.00–21.00	0.04–0.10	0.015 max.	1.00 max.	1.00 max.	1.80–2.70	1.00 max.	1.00–1.80	0.20 max.	1.50 max.	0.008 max.	0.020 max.

Mechanical Properties (Solution Annealed + Aged)

Product Form	Size Range	Rp0.2 MPa	Rm MPa	Elongation [%]	Hardness [HB]	Density [g/cm³]
Round Bar	Typical Ø10–300 mm; larger diameters subject to supplier/specification confirmation	≥620 MPa	≥1000 MPa	≥20	≈285 HB*	8.19–8.20
Plate / Sheet	Thickness range to be confirmed by producer, supplier and applicable specification	≥620 MPa	≥1000 MPa	≥20	≈285 HB*	8.19–8.20

** Many sources specify hardness as 300 HV min.; the HB value should therefore be used as an approximate conversion.*

Application Area

Sector	Products	Description
Aerospace and Gas Turbines	Turbine blades, turbine rings, turbine discs	Used in hot turbine sections due to its high-temperature creep strength, fatigue resistance and oxidation resistance.
Power Generation / Industrial Turbines	Rotor blades, stator blades, combustion chamber components	Preferred in land-based gas turbines and energy equipment operating at elevated temperatures.
Automotive / Internal Combustion Engines	Exhaust valves, diesel engine combustion chamber parts, high-temperature engine fasteners	Used especially in engine components exposed to hot gases, thermal cycling and mechanical load.
Nuclear Energy	Boiler tube supports, tube brackets, high-temperature connecting parts	Used in certain nuclear-related applications due to its mechanical stability at elevated temperature.
Fasteners	Bolts, nuts, washers	Used in connections where loosening, fatigue and load carrying under temperature are critical.
Casting and Mould Industry	Die casting inserts, mould cores, hot-work mould support parts	Used in mould components requiring resistance to high temperature, thermal fatigue and abrasive service conditions.
Springs and Special Wire Products	High-temperature springs, flat wire products, shaped wire parts	Preferred in spring and wire applications that operate under continuous stress and must retain elasticity at temperature.

Note: The information contained in this data sheet is for descriptive purposes only, no liability is accepted.

BH DÖVME METAL SANAYİ ve TİCARET LTD. ŞTİ.
Hatip Mah. Viawest 5 Sanayi Sitesi
Gündüz Sefası Sok. No:8/11, İç Kapı: E-11
Çorlu/Tekirdağ
info@bhmetal.com.tr
www.bhmetal.com.tr

Description

Nimonic 80A / Alloy 80A is a precipitation-hardenable nickel alloy that is easier to form in the solution annealed condition and gains high strength after ageing. Although it can be machined and welded, tool selection, process sequence and heat treatment control are important due to its high strength. Thanks to its high-temperature creep resistance, fatigue strength and oxidation resistance, it is preferred especially for components operating under mechanical load up to 815 °C.

Specification

Nimonic 80A, Alloy 80A, UNS N07080, W.Nr. 2.4952, W.Nr. 2.4631, NiCr20TiAl, VDM Alloy 80 A, Nicrofer 7520 Ti, CarTech 80A Alloy

Norms

Product Form	AMS	ASTM	DIN / EN-DIN
Round Bar	No confirmed AMS equivalent	ASTM B637 / ASME SB637	DIN 17240, DIN 17742, DIN EN 10090
Plate / Sheet / Strip	No confirmed AMS equivalent	No widely used direct ASTM plate standard confirmed	DIN 17742, DIN EN 10302

Alternative Grades

1. Inconel X-750
2. Nimonic 90
3. Inconel 718
4. Nimonic 75

Note: The information contained in this data sheet is for descriptive purposes only, no liability is accepted.