ALLOY-SEARCH

ALLOY-SEARCH DATASHEET — 2.4631 / 2.4952 – Alloy 80A – ASTM B637

DESCRIPTION

Nimonic 80A Superalloy is a nickel-chromium based material which offers excellent corrosion and oxidation resistance. The alloy is precipitation hardenable by adding aluminium & titanium and was developed to operate in service temperatures up to 815° C (1500°F).

APPLICABLE STANDARDS

UNS N07080
EN-ISO NiCr20TiAl
ASTM B637
BS2HR1 – NA20: 3076
DIN 2.4631 / 2.4952
Nimonic 80A
JIS NCF80A
Other standards available upon request

CHEMICAL COMPOSITION*

Element	C	Mn	Si	S	Cr	Fe	Ti	Al	Ni
Min %	-	-	-	-	18.00	-	1.80	0.50	-
Max %	0.10	1.00	1.00	0.015	21.00	3.00	2.70	1.80	Balance

* Per ASTM B-637

MECHANICAL PROPERTIES*

Property	Minimum
UTS	930 Mpa
Rp0.2	620 Mpa
Elongation % in 4D	20%
Reduction of Area %	30%
Elastic Module	219 Gpa
Hardness	107HB
Charpy V-Notch Impact	-

* Per ASTM B-637 – Solution Annealed, Stabilized and Precipitation Hardened.

TYPICAL PRODUCTS & USAGE

Wire
Rod
Bar
Forging
Automotive
Valves
Aerospace
Petrochemical

MATERIAL APPLICATION

Alloy 80A has decent machinability and weldability, making it a widely selected alloy for various applications in the petrochemical, oil- & gas and other industrial sectors requiring high-strength corrosion resistant alloys capable of operating at elevated temperatures.

80A is available in various sizes and grades, although the most common available one is per ASTM B-637 with heat treatments being solution annealing, stabilization and followed by a precipitation treatment to allow the added aluminium and titanium to precipitate and strengthen the alloy matrix to achieve the desired mechanical properties.

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