

Alloy R41

Alloy 41 is a Ni-base, precipitation hardening alloy with exceptionally high strength at room temperature and in the temperature range of 1200 - 1800°F. Mechanical properties can be tailored to specific applications by using various combinations of solution treating and aging treatments. It is produced by double vacuum melting (vacuum induction melting plus vacuum arc remelting).

Major applications are hot components for jet engines and rocket engines, such as turbine blades, turbine wheels, torque rings, combustion chamber liners, afterburner parts, structural hardware, and various airframe and missile components.

National Specifications

ASTM	UNS	SAE AMS	British Standard	Werkstoff
	N07041	5712	-	2.4973

Technical Data

Nominal Composition by Percent

	C	Cr	Co	Ti	Ni	Mo	Al	Fe	B	-
Min	-	18.0	10.0	3.0	BAL	9.0	1.4	-	.003	%
Max	0.12	20.0	12.0	3.3		10.5	1.6	5.0	.010	%

Typical Mechanical Properties

Annealed and Aged Condition	PSI	MPa	%
Tensile Strength, min	206,000	1420	-
Yield Strength (0.2% offset), min	154,000	1065	-
Elongation on 4D, min	-	-	14
Reduction of Area	-	-	-
Hardness	-	-	40 RC