ATI Allvac® Rene 41® Nickel Superalloy, Heat Treatment: 1079°C (1975°F) + Age

Categories: Metal; Nonferrous Metal; Nickel Alloy; Superalloy

Material Notes: Data provided by Allvac.

Applications: Jet and rocket engines, torque rings, afterburners, and hardware; space shuttle turbo pumps seals.

Key Words: Allvac, an Allegheny Teledyne Company, UNS N07041; AMS 5712, 5713; René 41 Nickel

Vendors: **Click here to view all available suppliers for this material.**

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Physical Properties	Metric	English	Comments
Density	8.24 g/cc	0.298 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	334	334	Estimated from Rockwell C value for Brinell test with 3000 kg load/10 mm diameter ball
Hardness, Knoop	363	363	Estimated from Rockwell C value.
Hardness, Rockwell C	36	36	
Hardness, Vickers	349	349	Estimated from Rockwell C value.
Tensile Strength, Ultimate	1241 MPa	180000 psi	
Tensile Strength, Yield	793 MPa @Strain 0.200 %	115000 psi @Strain 0.200 %	
Elongation at Break	20 %	20 %	
Reduction of Area	25 %	25 %	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	1.6 %	1.6 %	
Boron, B	0.0070 %	0.0070 %	
Carbon, C	0.060 %	0.060 %	
Chromium, Cr	19 %	19 %	
Cobalt, Co	11 %	11 %	
Iron, Fe	3.0 %	3.0 %	
Molybdenum, Mo	9.75 %	9.75 %	
Nickel, Ni	52 %	52 %	as balance
Titanium, Ti	3.15 %	3.15 %	