

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/in ³	
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 %	

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error. We also ask that you refer to MatWeb's [terms of use](#) regarding this information. [Click here](#) to view all the property values for this datasheet as they were originally entered into MatWeb.