Sandvik SANMAC 4571 Billet

Category : Metal , Ferrous Metal , Austenitic

Material Notes:

Sanmac 4571, 1.4571/316Ti, is a titanium stabilized, molybdenum-alloyed austenitic chrome-nickel steel with improved machinability.Information provided by SandvikASTM 316Ti; UNS S31635; EN 1.4571

Order this product through the following link:
http://www.lookpolymers.com/polymer_Sandvik-SANMAC-4571-Billet.php

Physical Properties	Metric	English	Comments
Density	8.00 g/cc	0.289 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	<= 215	<= 215	
Tensile Strength, Ultimate	515 - 700 MPa	74700 - 102000 psi	
	>= 360 MPa @Temperature 500 Â°C	>= 52200 psi @Temperature 932 Â°F	
	>= 375 MPa @Temperature 300 Â°C	>= 54400 psi @Temperature 572 Â°F	
	>= 375 MPa @Temperature 400 Â°C	>= 54400 psi @Temperature 752 Â°F	
	>= 390 MPa @Temperature 200 Â°C	>= 56600 psi @Temperature 392 Â°F	
	>= 440 MPa @Temperature 100 Â°C	>= 63800 psi @Temperature 212 Â°F	
Tensile Strength, Yield	>= 210 MPa @Strain 0.200 %	>= 30500 psi @Strain 0.200 %	
	>= 245 MPa @Strain 1.00 %	>= 35500 psi @Strain 1.00 %	
	>= 129 MPa @Strain 0.200 %, Temperature 500 Â°C	>= 18700 psi @Strain 0.200 %, Temperature 932 Â°F	
	>= 135 MPa @Strain 0.200 %,	>= 19600 psi @Strain 0.200 %,	

Mechanical Properties	Metric	English	Comments
	Temperature 400 Â°C	Temperature 752 Â°F	
	>= 145 MPa @Strain 0.200 %, Temperature 300 Â°C	>= 21000 psi @Strain 0.200 %, Temperature 572 Â°F	
	>= 158 MPa @Strain 1.00 %, Temperature 500 Â°C	>= 22900 psi @Strain 1.00 %, Temperature 932 Â°F	
	>= 164 MPa @Strain 1.00 %, Temperature 400 Â°C	>= 23800 psi @Strain 1.00 %, Temperature 752 Â°F	
	>= 165 MPa @Strain 0.200 %, Temperature 200 Â°C	>= 23900 psi @Strain 0.200 %, Temperature 392 Â°F	
	>= 175 MPa @Strain 1.00 %, Temperature 300 Â°C	>= 25400 psi @Strain 1.00 %, Temperature 572 Â°F	
	>= 185 MPa @Strain 0.200 %, Temperature 100 Â°C	>= 26800 psi @Strain 0.200 %, Temperature 212 Â°F	
	>= 192 MPa @Strain 1.00 %, Temperature 200 Â°C	>= 27800 psi @Strain 1.00 %, Temperature 392 Â°F	
	>= 215 MPa @Strain 1.00 %, Temperature 100 Â°C	>= 31200 psi @Strain 1.00 %, Temperature 212 Â°F	
Elongation at Break	>= 40 %	>= 40 %	
Reduction of Area	>= 50 %	>= 50 %	
Modulus of Elasticity	200 GPa	29000 ksi	
	165 GPa @Temperature 500 Â°C	23900 ksi @Temperature 932 Â°F	
	172 GPa @Temperature 400 Â°C	24900 ksi @Temperature 752 Â°F	
	179 GPa @Temperature 300 Â°C	26000 ksi @Temperature 572 Â°F	
	186 GPa	27000 ksi	

Mechanical Properties	Metric	English	Comments
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	194 GPa	28100 ksi	
	@Temperature 100 Â°C	@Temperature 212 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	16.5 Âµm/m-Â°C	9.17 Âµin/in-Â°F	
	@Temperature 30.0 - 100 Â°C	@Temperature 86.0 - 212 Â°F	
	17.0 Âµm/m-Â°C	9.44 Âµin/in-Â°F	
	@Temperature 30.0 - 200 Â°C	@Temperature 86.0 - 392 Â°F	
	17.5 Âµm/m-Â°C	9.72 Âµin/in-Â°F	
	@Temperature 30.0 - 300 Â°C	@Temperature 86.0 - 572 Â°F	
	18.0 Âµm/m-Â°C	10.0 Âµin/in-Â°F	
	@Temperature 30.0 - 500 Â°C	@Temperature 86.0 - 932 Â°F	
	18.0 Âµm/m-Â°C	10.0 Âµin/in-Â°F	
	@Temperature 30.0 - 400 Â°C	@Temperature 86.0 - 752 Â°F	
	18.5 Âµm/m-Â°C	10.3 Âµin/in-Â°F	
	@Temperature 30.0 - 600 Â°C	@Temperature 86.0 - 1110 Â°F	
	19.0 Âµm/m-Â°C	10.6 Âµin/in-Â°F	
	@Temperature 30.0 - 700 Â°C	@Temperature 86.0 - 1290 Â°F	
Specific Heat Capacity	0.485 J/g-Â°C	0.116 BTU/lb-Â°F	
	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F	
	0.500 J/g-Â°C	0.120 BTU/lb-Â°F	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	0.515 J/g-Â°C	0.123 BTU/lb-Â°F	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	0.525 J/g-Â°C	0.125 BTU/lb-Â°F	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	0.540 J/g-Â°C	0.129 BTU/lb-Â°F	

Thermal Properties	Metric	English	Comments
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	0.555 J/g-Â°C @Temperature 500 Â°C	0.133 BTU/lb-Â°F @Temperature 932 Â°F	
	0.575 J/g-Â°C @Temperature 600 Â°C	0.137 BTU/lb-Â°F @Temperature 1110 Â°F	
Thermal Conductivity	14.0 W/m-K @Temperature 20.0 Â°C	97.2 BTU-in/hr-ftÂ²-Â°F @Temperature 68.0 Â°F	
	15.0 W/m-K @Temperature 100 Â°C	104 BTU-in/hr-ftÂ²-Â°F @Temperature 212 Â°F	
	17.0 W/m-K @Temperature 200 Â°C	118 BTU-in/hr-ftÂ²-Â°F @Temperature 392 Â°F	
	18.0 W/m-K @Temperature 300 Â°C	125 BTU-in/hr-ftÂ²-Â°F @Temperature 572 Â°F	
	20.0 W/m-K @Temperature 400 Â°C	139 BTU-in/hr-ftÂ²-Â°F @Temperature 752 Â°F	
	21.0 W/m-K @Temperature 500 Â°C	146 BTU-in/hr-ftÂ²-Â°F @Temperature 932 Â°F	
	23.0 W/m-K @Temperature 600 Â°C	160 BTU-in/hr-ftÂ²-Â°F @Temperature 1110 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.030 %	0.030 %	
Chromium, Cr	17 %	17 %	
Iron, Fe	67.4 %	67.4 %	Calculated as balance from specified elements
Manganese, Mn	1.8 %	1.8 %	
Molybdenum, Mo	2.1 %	2.1 %	
Nickel, Ni	11 %	11 %	
Phosphorous, P	<= 0.045 %	<= 0.045 %	
Silicon, Si	0.40 %	0.40 %	

Component Elements Properties	Metric	English	Comments
Sulfur, S	<= 0.030 %	<= 0.030 %	
Titanium, Ti	>= 0.15 %	>= 0.15 %	

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