Kennametal Stellite StelliteÂ® 6 PM cast

Category : Metal , Nonferrous Metal , Cobalt Alloy , Superalloy

Material Notes:

Adhesive wear test data: 0.49 P/M, 0.48 Cast; Typical applications include: (aerospace) vane plugs, fuel metering pins, spacer bushings, (bearings) ball blanks, race blanks, (valve seat inserts) diesel engine exhaust, fluid valve seats, saw cutter inserts, miscellaneous wear parts. Data provide by the manufacturer, Deloro Stellite Inc.Product of former Deloro Stellite Inc.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Kennametal-Stellite-Stellite-6-PM-cast.php

Physical Properties	Metric	English	Comments
Density	8.20 g/cc	0.296 lb/inÂ³	P/M (98%)
	8.38 g/cc	0.303 lb/inÂ³	theoretical

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	364	364	Converted from Rockwell C hardness.
	224 @Temperature 760 Â°C	224 @Temperature 1400 Â°F	Converted from Rockwell C hardness
	312 @Temperature 649 Â°C	312 @Temperature 1200 Â°F	Converted from Rockwell C hardness
	345 @Temperature 538 Â°C	345 @Temperature 1000 Â°F	Converted from Rockwell C hardness
Hardness, Knoop	436	436	Converted from Rockwell C hardness.
	262 @Temperature 760 Â°C	262 @Temperature 1400 Â°F	Converted from Rockwell C hardness
	372 @Temperature 649 Â°C	372 @Temperature 1200 Â°F	Converted from Rockwell C hardness
	413 @Temperature 538 Â°C	413 @Temperature 1000 Â°F	Converted from Rockwell C hardness
Hardness, Rockwell A	70	70	Converted from Rockwell C hardness.
		60	

Mechanical Properties	Metric	English	Comments
	60 @Temperature 760 Â°C	@Temperature 1400 Â°F	Converted from Rockwell C hardness
	67 @Temperature 649 Â°C	67 @Temperature 1200 Â°F	Converted from Rockwell C hardness
	69 @Temperature 538 Â°C	69 @Temperature 1000 Â°F	Converted from Rockwell C hardness
Hardness, Rockwell C	40	40	
	19 @Temperature 760 Â°C	19 @Temperature 1400 Â°F	
	34 @Temperature 649 Â°C	34 @Temperature 1200 Â°F	
	38 @Temperature 538 Â°C	38 @Temperature 1000 Â°F	
Hardness, Vickers	383	383	Converted from Rockwell C hardness.
	230 @Temperature 760 Â°C	230 @Temperature 1400 Â°F	Converted from Rockwell C hardness
	326 @Temperature 649 Â°C	326 @Temperature 1200 Â°F	Converted from Rockwell C hardness
	362 @Temperature 538 Â°C	362 @Temperature 1000 Â°F	Converted from Rockwell C hardness
Tensile Strength, Ultimate	911 MPa	132000 psi	
	552 MPa @Temperature 760 Â°C	80100 psi @Temperature 1400 Â°F	
	676 MPa @Temperature 649 Â°C	98000 psi @Temperature 1200 Â°F	
	759 MPa	110000 psi	

Mechanical Properties	Metric	English	Comments
Elongation at Break	<= 1.0 %	<= 1.0 %	in 25.4 mm
	1.0 % @Temperature 538 Â°C	1.0 % @Temperature 1000 Â°F	in 25.4 mm
	2.0 % @Temperature 649 Â°C	2.0 % @Temperature 1200 Â°F	in 25.4 mm
	5.0 % @Temperature 760 Â°C	5.0 % @Temperature 1400 Â°F	in 25.4 mm

Thermal Properties	Metric	English	Comments
CTE, linear	13.9 Âµm/m-Â°C @Temperature 0.000 - 100 Â°C	7.72 Âµin/in-Â°F @Temperature 32.0 - 212 Â°F	
	14.1 Âµm/m-Â°C @Temperature 0.000 - 200 Â°C	7.83 Âµin/in-Â°F @Temperature 32.0 - 392 Â°F	
	14.5 Âµm/m-Â°C @Temperature 0.000 - 300 Â°C	8.06 Âµin/in-Â°F @Temperature 32.0 - 572 Â°F	
	14.7 Âµm/m-Â°C @Temperature 0.000 - 400 Â°C	8.17 Âµin/in-Â°F @Temperature 32.0 - 752 Â°F	
	15.0 Âµm/m-Â°C @Temperature 0.000 - 500 Â°C	8.33 Âµin/in-Â°F @Temperature 32.0 - 932 Â°F	
	15.3 Âµm/m-Â°C @Temperature 0.000 - 600 Â°C	8.50 Âµin/in-Â°F @Temperature 32.0 - 1110 Â°F	
	15.8 Âµm/m-Â°C @Temperature 0.000 - 700 Â°C	8.78 Âµin/in-Â°F @Temperature 32.0 - 1290 Â°F	
	16.3 Âµm/m-Â°C @Temperature 0.000 - 800 Â°C	9.06 Âµin/in-Â°F @Temperature 32.0 - 1470 Â°F	

Thermal Properties	Metric	English	Comments
	16.9 Âµm/m-Â°C @Temperature 0.000 - 900 Â°C	9.39 Âµin/in-Â°F @Temperature 32.0 - 1650 Â°F	
	17.4 Âµm/m-Â°C @Temperature 0.000 - 1000 Â°C	9.67 Âµin/in-Â°F @Temperature 32.0 - 1830 Â°F	
Melting Point	1260 - 1357 Â°C	2300 - 2475 Â°F	
Solidus	1260 Â°C	2300 Â°F	
Liquidus	1357 Â°C	2475 Â°F	

Component Elements Properties	Metric	English	Comments
Boron, B	<= 1.0 %	<= 1.0 %	
Carbon, C	1.2 %	1.2 %	
Chromium, Cr	29 %	29 %	
Cobalt, Co	52.3 %	52.3 %	As remainder
Iron, Fe	<= 3.0 %	<= 3.0 %	
Manganese, Mn	1.0 %	1.0 %	
Molybdenum, Mo	<= 1.5 %	<= 1.5 %	
Nickel, Ni	<= 3.0 %	<= 3.0 %	
Other	<= 2.0 %	<= 2.0 %	
Silicon, Si	<= 1.5 %	<= 1.5 %	
Tungsten, W	4.5 %	4.5 %	

Electrical Properties	Metric	English	Comments
Magnetic Permeability	<= 1.20 @Temperature 22.0 Â°C	<= 1.20 @Temperature 71.6 Â°F	200 Oersted

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