

Kennametal Stellite Stellite® 6 PM with P/M Processing

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-with-PM-Processing.php

Physical Properties	Metric	English	Comments
Density	8.20 g/cc	0.296 lb/in ³	P/M (98%)
	8.38 g/cc	0.303 lb/in ³	theoretical

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	364	364	Converted from Rockwell C hardness.
	207	207	Converted from Rockwell C hardness
	@Temperature 760 Â°C	@Temperature 1400 Â°F	
	284	284	Converted from Rockwell C hardness
	@Temperature 649 Â°C	@Temperature 1200 Â°F	
Hardness, Knoop	337	337	Converted from Rockwell C hardness
	@Temperature 538 Â°C	@Temperature 1000 Â°F	
	436	436	Converted from Rockwell C hardness.
	241	241	Converted from Rockwell C hardness
@Temperature 760 Â°C	@Temperature 1400 Â°F		
	@Temperature 649 Â°C	@Temperature 1200 Â°F	Converted from Rockwell C hardness
	402	402	Converted from Rockwell C hardness
	@Temperature 538 Â°C	@Temperature 1000 Â°F	
Hardness, Rockwell A	70	70	Converted from Rockwell C hardness.
		58	

Mechanical Properties	Metric	English	Comments
	@Temperature 760 Â°C	@Temperature 1400 Â°F	Converted from Rockwell C hardness
	65	65	Converted from Rockwell C hardness
	@Temperature 649 Â°C	@Temperature 1200 Â°F	
	69	69	Converted from Rockwell C hardness
	@Temperature 538 Â°C	@Temperature 1000 Â°F	
Hardness, Rockwell C	40	40	
	15	15	
	@Temperature 760 Â°C	@Temperature 1400 Â°F	
	30	30	
	@Temperature 649 Â°C	@Temperature 1200 Â°F	
	37	37	
	@Temperature 538 Â°C	@Temperature 1000 Â°F	
Hardness, Vickers	383	383	Converted from Rockwell C hardness.
	212	212	Converted from Rockwell C hardness
	@Temperature 760 Â°C	@Temperature 1400 Â°F	
	294	294	Converted from Rockwell C hardness
	@Temperature 649 Â°C	@Temperature 1200 Â°F	
	352	352	Converted from Rockwell C hardness
	@Temperature 538 Â°C	@Temperature 1000 Â°F	
Tensile Strength, Ultimate	897 MPa	130000 psi	
	518 MPa	75100 psi	
	@Temperature 760 Â°C	@Temperature 1400 Â°F	
	766 MPa	111000 psi	
	@Temperature 649 Â°C	@Temperature 1200 Â°F	
	828 MPa	120000 psi	

Mechanical Properties	Metric @Temperature 538 Å°C	English @Temperature 1000 Å°F	Comments
Elongation at Break	<= 1.0 %	<= 1.0 %	in 25.4 mm
	1.0 % @Temperature 538 Å°C	1.0 % @Temperature 1000 Å°F	in 25.4 mm
	1.0 % @Temperature 649 Å°C	1.0 % @Temperature 1200 Å°F	in 25.4 mm
	10 % @Temperature 760 Å°C	10 % @Temperature 1400 Å°F	in 25.4 mm

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

Thermal Properties	Metric	English	Comments
	@Temperature 0.000 - 900 Å°C	@Temperature 32.0 - 1650 Å°F	
	17.4 Åµm/m-Å°C	9.67 Åµin/in-Å°F	
	@Temperature 0.000 - 1000 Å°C	@Temperature 32.0 - 1830 Å°F	
Melting Point	1260 - 1357 Å°C	2300 - 2475 Å°F	
Solidus	1260 Å°C	2300 Å°F	
Liquidus	1357 Å°C	2475 Å°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	<= 1.20	200 Oersted
	@Temperature 22.0 Å°C	@Temperature 71.6 Å°F	

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