

Kennametal Stellite Stellite® 12

Category : Metal , Nonferrous Metal , Cobalt Alloy , Superalloy

Material Notes:

Satisfactory finishing results can be obtained using carbide tipped tools. Applications include cutting plastics, rubber, paper, carpet, and wood; saw teeth, trimmer knives, carpet knives, ledger blades, rotary slitters, grid nozzles, burner tips, guide rolls, sleeves, bushings, and for protecting bearing surfaces, screw flights, and veneer pressure bars. Data provided 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-12.php

Physical Properties	Metric	English	Comments
Density	8.52 g/cc	0.308 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	463	463	Converted from Rockwell C hardness.
Hardness, Rockwell A	75	75	Converted from Rockwell C hardness.
Hardness, Rockwell C	43 - 55	43 - 55	
Hardness, Vickers	496	496	Converted from Rockwell C hardness.
Tensile Strength, Ultimate	690 MPa	100000 psi	(Tensile Yield Strength near U.T.S.)
Elongation at Break	<= 1.0 %	<= 1.0 %	
Modulus of Elasticity	226 GPa	32800 ksi	
Ultimate Compressive Strength	1331 MPa	193000 psi	
Izod Impact Unnotched	9.50 J	7.01 ft-lb	

Thermal Properties	Metric	English	Comments
CTE, linear	11.9 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	6.61 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 0.000 - 100 $\text{Å}^\circ\text{C}$	@Temperature 32.0 - 212 $\text{Å}^\circ\text{F}$	
	12.9 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	7.17 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 0.000 - 300 $\text{Å}^\circ\text{C}$	@Temperature 32.0 - 572 $\text{Å}^\circ\text{F}$	
	13.8 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	7.67 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 0.000 - 500 $\text{Å}^\circ\text{C}$	@Temperature 32.0 - 932 $\text{Å}^\circ\text{F}$	

Thermal Properties	Metric	English	Comments
	@Temperature 0.000 - 600 Å°C	@Temperature 32.0 - 1110 Å°F	
	14.4 Åµm/m-Å°C	8.00 Åµin/in-Å°F	
	@Temperature 0.000 - 700 Å°C	@Temperature 32.0 - 1290 Å°F	
	15.2 Åµm/m-Å°C	8.44 Åµin/in-Å°F	
	@Temperature 0.000 - 800 Å°C	@Temperature 32.0 - 1470 Å°F	
	15.2 Åµm/m-Å°C	8.44 Åµin/in-Å°F	
	@Temperature 0.000 - 900 Å°C	@Temperature 32.0 - 1650 Å°F	
	15.8 Åµm/m-Å°C	8.78 Åµin/in-Å°F	
	@Temperature 0.000 - 1000 Å°C	@Temperature 32.0 - 1830 Å°F	
Thermal Conductivity	14.7 W/m-K	102 BTU-in/hr-ftÅ²-Å°F	
Melting Point	1255 - 1341 Å°C	2291 - 2446 Å°F	
Solidus	1255 Å°C	2291 Å°F	
Liquidus	1341 Å°C	2446 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.5 %	1.5 %	
Chromium, Cr	29 %	29 %	
Cobalt, Co	55.5 %	55.5 %	As remainder
Iron, Fe	2.0 %	2.0 %	
Nickel, Ni	2.0 %	2.0 %	
Silicon, Si	1.0 %	1.0 %	
Tungsten, W	9.0 %	9.0 %	

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