

Crucible Steel 20 Cb Plus Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel , T 300 Series Stainless Steel

Material Notes:

Crucible 20 Cb Plus is a non-hardenable stabilized stainless steel with exceptional resistance to sulfuric, phosphoric, and nitric acid. This grade also has good resistance to stress corrosion cracking. Information provided by Crucible Specialty Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Crucible-Steel-20-Cb-Plus-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	8.05 g/cc	0.291 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	179	179	
Tensile Strength, Ultimate	655 MPa	95000 psi	
	200 MPa	29000 psi	
	@Temperature 871 °C	@Temperature 1600 °F	
	572 MPa	83000 psi	
	@Temperature 204 °C	@Temperature 400 °F	
	1060 MPa	154000 psi	
	@Temperature -196 °C	@Temperature -320 °F	
Tensile Strength, Yield	131 MPa	19000 psi	
	@Temperature 871 °C	@Temperature 1600 °F	
	241 MPa	35000 psi	
	@Temperature 204 °C	@Temperature 400 °F	
	538 MPa	78000 psi	
	@Temperature -196 °C	@Temperature -320 °F	
	310 MPa	45000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	40 %	40 %	in 2"
	36 %	36 %	
	@Temperature -129 °C	@Temperature -200 °F	
	44 %	44 %	

Mechanical Properties	@Temperature 204 °C Metric	@Temperature 400 °F English	Comments
	75 %	75 %	
	@Temperature 871 °C	@Temperature 1600 °F	
Reduction of Area	65 %	65 %	
Modulus of Elasticity	193 GPa	28000 ksi	Tension
Poissons Ratio	0.27	0.27	Calculated
Shear Modulus	75.8 GPa	11000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	15.0 µm/m-°C	8.31 µin/in-°F	
	@Temperature 25.0 - 100 °C	@Temperature 77.0 - 212 °F	
	17.9 µm/m-°C	9.97 µin/in-°F	
	@Temperature 25.0 - 900.0 °C	@Temperature 77.0 - 1652 °F	
Specific Heat Capacity	0.502 J/g-°C	0.120 BTU/lb-°F	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
Thermal Conductivity	17.240 W/m-K	119.64 BTU-in/hr-ft²-°F	
	@Temperature 538 °C	@Temperature 1000 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.060 %	<= 0.060 %	
Chromium, Cr	19 - 21 %	19 - 21 %	
Copper, Cu	3.0 - 4.0 %	3.0 - 4.0 %	
Iron, Fe	>= 32.87 %	>= 32.87 %	As Remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	2.0 - 3.0 %	2.0 - 3.0 %	
Nb + Ta	<= 1.0 %	<= 1.0 %	
Nickel, Ni	32.5 - 35 %	32.5 - 35 %	
Phosphorous, P	<= 0.035 %	<= 0.035 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	

Component Elements Properties	Metric	English	Comments
	±0.035 %	±0.035 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0001039 ohm-cm	0.0001039 ohm-cm	
	@Temperature 23.0 °C	@Temperature 73.4 °F	

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