Haynes CABVAL Hastelloy® G-50™ Grade 100 Ni-Cr-Fe-Mo Alloy (discontinued **)

Categories: Metal; Nonferrous Metal; Nickel Alloy; Superalloy

Material Notes: Developed as a lower cost alternative to Hastelloy C-276 for use by producers of sour gas. Improved corrosion resistance compared to G-3 in service with high hydrogen disulfide concentrations in combination with carbon dioxide, chloride, etc. Its corrosion resistance at elevated temperatures falls between G-3 and C-276 in 15% HCl and in hydrogen sulfide stress corrosion cracking tests. G-50 alloy lends itself to consistent methods of manufacture of tubular products.

Data provided by CABVAL, a joint venture between Haynes International and Vallourec Industries.

Key Words: UNS N06950

Vendors: Click here to view all available suppliers for this material.

Please click here if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	8.33 g/cc	0.301 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	290	290	Estimated from Rockwell C for Brinell 10 mm ball/3000 kg load
Hardness, Knoop	345	345	Estimated from Rockwell C
Hardness, Rockwell A	66	66	Estimated from Rockwell C
Hardness, Rockwell C	<= 31	<= 31	
Hardness, Vickers	300	300	Estimated from Rockwell C
Tensile Strength, Ultimate	>= 760 MPa	>= 110000 psi	
Tensile Strength, Yield	700 - 860 MPa @Strain 0.200 %	102000 - 125000 psi @Strain 0.200 %	
Elongation at Break	>= 20 %	>= 20 %	
Modulus of Elasticity	192 GPa @Temperature 23.0 °C	27800 ksi @Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 µm/m-°C @Temperature 20.0 - 95.0 °C	7.22 µin/in-°F @Temperature 68.0 - 203 °F	
	13.54 µm/m-°C @Temperature 20.0 - 204 °C	7.522 µin/in-°F @Temperature 68.0 - 399 °F	
	14.09 µm/m-°C @Temperature 20.0 - 315 °C	7.828 µin/in-°F @Temperature 68.0 - 599 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.40 %	<= 0.40 %	
Carbon, C	<= 0.020 %	<= 0.020 %	
Chromium, Cr	19 - 21 %	19 - 21 %	
Cobalt, Co	<= 2.5 %	<= 2.5 %	
Copper, Cu	<= 0.50 %	<= 0.50 %	
Iron, Fe	15 - 20 %	15 - 20 %	
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Molybdenum, Mo	8.0 - 10 %	8.0 - 10 %	
Nickel, Ni	>= 50 %	>= 50 %	
Niobium, Nb (Columbium, Cb)	<= 0.50 %	<= 0.50 %	
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.015 %	<= 0.015 %	
Tungsten, W	<= 1.0 %	<= 1.0 %	

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