

Industeel VIRGO 39 16% Cr, 5% Ni, Martensitic Stainless Steel

Category : Metal , Ferrous Metal , Martensitic , Stainless Steel

Material Notes:

Description: Virgo 39 is a 16% Cr, 5% Ni, 1% Mo low carbon martensitic stainless steel. The grade is specially designed to combine high mechanical properties including toughness and improved corrosion resistance properties when compared to other martensitic stainless steels, like 13 Cr and 13 Cr 4 Ni grades. The alloy has been primarily designed to resist to erosion-corrosion or cavitation encountered in hydraulic applications. The alloy is also used for hydrofoils legs, as anti-seismic compounds or offshore structures, boats, landing grids for helicopters, where the combined mechanical and corrosion resistance properties are needed. Mining, cement plants, and hydraulic applications take also advantage of its combined abrasion-corrosion resistance properties. Information provided by manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Industeel-VIRGO-39-16-Cr-5-Ni-Martensitic-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.70 g/cc	0.278 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	230 - 320	230 - 320	Typical
Tensile Strength, Ultimate	850 MPa	123000 psi	Quenched Tempered
Tensile Strength, Yield	615 MPa @Strain 0.200 %	89200 psi @Strain 0.200 %	Quenched Tempered
Elongation at Break	>= 15 %	>= 15 %	
Modulus of Elasticity	210 GPa	30500 ksi	
Poissons Ratio	0.346	0.346	Calculated
Shear Modulus	78.0 GPa @Temperature 20.0 Â°C	11300 ksi @Temperature 68.0 Â°F	
Charpy Impact	35.0 J	25.8 ft-lb	Guaranteed in T Direction
	60.0 J	44.3 ft-lb	Guaranteed in L Direction
	100 J	73.8 ft-lb	Typical

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 Âµm/m-Â°C @Temperature 20.0 - 100 Â°C	5.56 Âµin/in-Â°F @Temperature 68.0 - 212 Â°F	

Thermal Properties	Metric	English	Comments
	11.0 Åum/m-Å°C @Temperature 20.0 - 200 Å°C	6.11 Åuin/in-Å°F @Temperature 68.0 - 392 Å°F	
Specific Heat Capacity	0.460 J/g-Å°C @Temperature 20.0 Å°C	0.110 BTU/lb-Å°F @Temperature 68.0 Å°F	
Thermal Conductivity	20.0 W/m-K @Temperature 20.0 Å°C	139 BTU-in/hr-ftÅ²-Å°F @Temperature 68.0 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.045 %	0.045 %	
Chromium, Cr	16 %	16 %	
Iron, Fe	77.934 %	77.934 %	As remainder
Molybdenum, Mo	1.0 %	1.0 %	
Nickel, Ni	5.0 %	5.0 %	
Phosphorous, P	0.020 %	0.020 %	
Sulfur, S	0.0010 %	0.0010 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000750 ohm-cm @Temperature 20.0 Å°C	0.0000750 ohm-cm @Temperature 68.0 Å°F	

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