

Latrobe LSS,ç 17-4 Precipitation Hardening Stainless Steel (ASTM Type 360)

Category : Metal , Ferrous Metal , Martensitic , Stainless Steel , Precipitation Hardening Stainless

Material Notes:

TLS 17-4 is a precipitation hardening, martensitic stainless steel that exhibits excellent resistance to atmospheric and chemical corrosion. TLS 17-4 exhibits an excellent combination of high strength and corrosion resistance. Because it resists attack from the corrosive vapors that are produced during molding of some plastic resins, it is used extensively in nozzle tips and feed screws in the plastic injection molding industry. The corrosion resistance also enhances extended tool storage in humid environments. Other common applications include plastic mold cavity inserts, plastic extrusion dies, fasteners, valves, and gears. Information Provided by Timken Latrobe Steel. Timken sold Latrobe in December 2006. They are now Latrobe Specialty Steels Co.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Latrobe-LSS-17-4-Precipitation-Hardening-Stainless-Steel-ASTM-Type-360.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.80 g/cc	7.80 g/cc	
Density	7.81 g/cc	0.282 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	33	33	615 ^o C Aging Temperature
	44	44	480 ^o C Aging Temperature
Modulus of Elasticity	197 GPa	28500 ksi	
Poissons Ratio	0.272	0.272	
Shear Modulus	77.4 GPa	11200 ksi	Calculated
Charpy Impact	6.00 J	4.43 ft-lb	480 ^o C Aging Temperature
	65.0 J	47.9 ft-lb	

Thermal Properties	Metric	English	Comments
CTE, linear	10.78 $\mu\text{m/m-}^{\circ}\text{C}$	5.989 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 21.0 - 204 $^{\circ}\text{C}$	@Temperature 69.8 - 399 $^{\circ}\text{F}$	
	11.32 $\mu\text{m/m-}^{\circ}\text{C}$	6.289 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 21.0 - 427 $^{\circ}\text{C}$	@Temperature 69.8 - 801 $^{\circ}\text{F}$	
Specific Heat Capacity	0.460 J/g- $^{\circ}\text{C}$	0.110 BTU/lb- $^{\circ}\text{F}$	
	@Temperature 0.000 - 100 $^{\circ}\text{C}$	@Temperature 32.0 - 212 $^{\circ}\text{F}$	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	17.87 W/m-K @Temperature 149 Â°C	135.1 BTU-in/hr-ftÂ²- Â°F @Temperature 300 Â°F	
	19.46 W/m-K @Temperature 260 Â°C	135.1 BTU-in/hr-ftÂ²- Â°F @Temperature 500 Â°F	
	22.62 W/m-K @Temperature 482 Â°C	157.0 BTU-in/hr-ftÂ²- Â°F @Temperature 900 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.030 %	0.030 %	
Chromium, Cr	15.75 %	15.75 %	
Copper, Cu	3.5 %	3.5 %	
Iron, Fe	74.37 %	74.37 %	
Manganese, Mn	0.70 %	0.70 %	
Nb + Ta	0.30 %	0.30 %	
Nickel, Ni	4.75 %	4.75 %	
Silicon, Si	0.60 %	0.60 %	

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