35N LT®

Melt Practice

This superalloy is typically double melted to remove impurities. However this melt practice is an enhancement of the standard melt practice for ASTM F-562 material yielding much lower inclusion counts. This results in improved fatigue life of as-drawn wire by as much as 800%.

Applications

35N LT is an excellent combination of strength and corrosion resistance. Typically used in the cold-worked condition, tensile strengths are typically comparable to 304. End uses in the medical field are: pacing leads, stylets, catheters and orthopaedic cables.

Typical Chemistry

	FWM Avg. Wt. %	ASTM F562
Carbon	.010	.025
Manganese	.06	.15
Silicon	.03	.15
Phosphorus	.002	.015
Sulphur	.001	.01
Chromium	20.58	19-21
Nickel	34.82	33-37
Molybdenum	9.51	9-10.50
Cobalt	Balance	Balance
Titanium	<=.01	1
Iron	.52	1
Boron	.010	.015

FWM chemistry is for reference only, and is not to be used for specification purposes.

Mechanical Properties

% CW	Y.S. ksi (MPa)	U.T.S. ksi (MPa)	% Elongation (10" gage length)
0%	130 (896)	190 (1310)	40.0%
20%	190 (1310)	240 (1655)	8.0%
37%	240 (1655)	280 (1931)	3.8%
50%	270 (1862)	300 (2268)	3.8%
60%	290 (1999)	320 (2206)	3.5%
68%	300 (2068)	330 (2275)	3.5%
75%	305 (2103)	340 (2344)	3.3%
80%	315 (2172)	350 (2413)	3.0%
84%	325 (2241)	360 (2482)	3.0%
90%	333 (2296)	370 (2551)	3.0%
93%	338 (2330)	375 (2586)	2.5%
95%	340 (2344)	380 (2620)	2.5%

Values are typical for diameters smaller than .010 in (.254 mm).

Physical Properties

	English	Metric
Density	.304 lbs/in^3	8.41 g/cc
Modulus Of Elasticity	33.8e6 psi	233 Gpa
Electrical Resistivity	40.7 µohm-in	1033 µohm-mm
Thermal Conductivity	77.7 Btu-in/hr-ft^2-°F	11.2 W/m K
Thermal Coefficient of Expansion	7.11 µin/in-°F	12.8 µm/m-°C

Thermal Treatment

A reducing atmosphere is preferred for thermal treatment but inert gas can be used. 35N LT will fully anneal at 1010-1177°C in just a few minutes. For optimum mechanical properties, cold worked 35N LT should be aged at 583-593°C for four hours.

Rotary Beam Fatigue