

Special Metals UDIMAR® alloy 300 Fe-Ni Maraging Steel

Category : Metal , Ferrous Metal , Maraging Steel

Material Notes:

UDIMAR® alloy 300 (UNS K93120) is an age-hardenable (maraging) iron-nickel steel combining ultra-high strength, toughness and resistance to crack propagation. The alloy is well suited to applications where heat treatment distortion and dimensional changes much be minimized and where high fracture toughness is required, such as rocket motor casings, light aircraft landing gear, power shafts and low temperature tooling. The 18% nickel maraging steels offer a unique combination of properties not available from conventional low alloy ultra-high strength steels. They offer high strength, high ductility and toughness, and resistance to crack propagation. Hardening is accomplished by a simple aging cycle of 3 hours at 900°F (482°C) followed by air cooling. UDIMAR alloy 300 provides through hardening without quenching, freedom from decarburization, minimal distortion during aging, good formability, machinability, and weldability and a low coefficient of thermal expansion. Information Provided by Special Metals Corporation

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-UDIMAR-alloy-300-Fe-Ni-Maraging-Steel.php

Physical Properties	Metric	English	Comments
Density	8.00 g/cc	0.289 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	30	30	Solution Annealed, AC
	@Temperature 816 Å°C, Time 3600 sec	@Temperature 1500 Å°F, Time 1.00 hour	
	52	52	Solution Annealed Plus Aged, AC
	@Temperature 482 Å°C, Time 10800 sec	@Temperature 900 Å°F, Time 3.00 hour	
Tensile Strength, Ultimate	1030 MPa	150000 psi	Solution Annealed, AC
	@Temperature 816 Å°C, Time 3600 sec	@Temperature 1500 Å°F, Time 1.00 hour	
	2000 MPa	290000 psi	Solution Annealed Plus Aged, AC
	@Temperature 482 Å°C, Time 10800 sec	@Temperature 900 Å°F, Time 3.00 hour	
Tensile Strength, Yield	827 MPa	120000 psi	Solution Annealed, AC
	@Strain 0.200 %, Temperature 816 Å°C	@Strain 0.200 %, Temperature 1500 Å°F	
	1930 MPa	280000 psi	Solution Annealed Plus Aged, AC
	@Strain 0.200 %, Temperature 482 Å°C	@Strain 0.200 %, Temperature 900 Å°F	

Mechanical Properties	827 MPa Metric	120000 psi English	Comments Solution Annealed, AC
	@Strain 0.200 %, Time 3600 sec	@Strain 0.200 %, Time 1.00 hour	
	1930 MPa	280000 psi	Solution Annealed Plus Aged, AC
	@Strain 0.200 %, Time 10800 sec	@Strain 0.200 %, Time 3.00 hour	
Elongation at Break	8.0 %	8.0 %	Solution Annealed Plus Aged, AC
	@Temperature 482 Â°C, Time 10800 sec	@Temperature 900 Â°F, Time 3.00 hour	
	16 %	16 %	Solution Annealed, AC
	@Temperature 816 Â°C, Time 3600 sec	@Temperature 1500 Â°F, Time 1.00 hour	
Reduction of Area	40 %	40 %	Solution Annealed Plus Aged, AC
	@Temperature 482 Â°C, Time 10800 sec	@Temperature 900 Â°F, Time 3.00 hour	
	70 %	70 %	Solution Annealed, AC
	@Temperature 816 Â°C, Time 3600 sec	@Temperature 1500 Â°F, Time 1.00 hour	

Thermal Properties	Metric	English	Comments
CTE, linear	8.64 Âµm/m-Â°C	4.80 Âµin/in-Â°F	
	@Temperature 93.0 Â°C	@Temperature 199 Â°F	
Specific Heat Capacity	0.335 J/g-Â°C	0.0801 BTU/lb-Â°F	
Thermal Conductivity	19.6 W/m-K	136 BTU-in/hr-ftÂ²-Â°F	
Melting Point	1427 - 1454 Â°C	2601 - 2649 Â°F	
Solidus	1427 Â°C	2601 Â°F	
Liquidus	1454 Â°C	2649 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.050 - 0.15 %	0.050 - 0.15 %	
Carbon, C	<= 0.030 %	<= 0.030 %	
Cobalt, Co	8.0 - 9.5 %	8.0 - 9.5 %	
Iron, Fe	65.1 - 68.8 %	65.1 - 68.8 %	Balance

Component Elements Properties	Metric	English	Comments
Molybdenum, Mo	4.6 - 5.2 %	4.6 - 5.2 %	
Nickel, Ni	18 - 19 %	18 - 19 %	
Phosphorous, P	<= 0.010 %	<= 0.010 %	
Silicon, Si	<= 0.10 %	<= 0.10 %	
Sulfur, S	<= 0.010 %	<= 0.010 %	
Titanium, Ti	0.55 - 0.80 %	0.55 - 0.80 %	

Electrical Properties	Metric	English	Comments
Magnetic Permeability	77.5	77.5	at 200 oersted (15.9 kA/m)

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China