

EOS MS1 Maraging Steel for DMLS 3D Printing

Category : Metal , Ferrous Metal , Maraging Steel

Material Notes:

EOS Maraging Steel MS1 is a steel powder which has been optimized especially for processing on EOSINT M 270 systems. This steel has very good mechanical properties, and is easily heat-treatable using a simple thermal age-hardening process to obtain excellent hardness and strength. This material is ideal for many tooling applications (DirectTool) such as tools for injection molding, die casting of light metal alloys, punching, extrusion etc., and also for high performance industrial and engineering parts, for example in aerospace and motor racing applications. EOS®, EOSINT®, and DMLS® are registered trademarks of EOS GmbH. Information provided by Axis Prototyping.

Order this product through the following link:

http://www.lookpolymers.com/polymer_EOS-MS1-Maraging-Steel-for-DMLS-3D-Printing.php

Physical Properties	Metric	English	Comments
Density	8.0 - 8.1 g/cc	0.29 - 0.29 lb/in ³	
Porosity	0.0 %	0.0 %	with standard processing parameters

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	33 - 37	33 - 37	as built
	50 - 54	50 - 54	after age hardening
Tensile Strength, Ultimate	1000 - 1200 MPa	145000 - 174000 psi	as built
	1670 - 2230 MPa	242000 - 323000 psi	after age hardening
Tensile Strength, Yield	900 - 1100 MPa	131000 - 160000 psi	as built
	@Strain 0.2 %	@Strain 0.2 %	
Elongation at Break	1800 - 2000 MPa	261000 - 290000 psi	after age hardening
	@Strain 0.2 %	@Strain 0.2 %	
Modulus of Elasticity	1 - 3 %	1 - 3 %	after age hardening
	5 - 11 %	5 - 11 %	as built
Charpy Impact	160 - 200 GPa	23200 - 29000 ksi	
	7.00 - 15.0 J	5.16 - 11.1 ft-lb	Notched; after age hardening
	35.0 - 55.0 J	25.8 - 40.6 ft-lb	Notched; as built

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	0.430 - 0.470 J/g-°C	0.103 - 0.112 BTU/lb-°F	as built

Thermal Properties	Metric	English	Comments
	0.470 J/g-°C	0.103 - 0.112 BTU-in/hr-ft ² -°F	hardening
Thermal Conductivity	14.2 - 15.8 W/m-K	98.5 - 110 BTU-in/hr-ft ² -°F	as built
	19.0 - 21.0 W/m-K	132 - 146 BTU-in/hr-ft ² -°F	after age hardening
Maximum Service Temperature, Air	400 °C	752 °F	
Shrinkage	0.08 % @Temperature 490 °C, Time 21600 sec	0.08 % @Temperature 914 °F, Time 6.00 hour	age hardening

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.05 - 0.15 %	0.05 - 0.15 %	
Carbon, C	<= 0.03 %	<= 0.03 %	
Chromium, Cr	<= 0.5 %	<= 0.5 %	
Cobalt, Co	8.5 - 9.5 %	8.5 - 9.5 %	
Iron, Fe	64.6 - 69.35 %	64.6 - 69.35 %	as balance
Manganese, Mn	<= 0.1 %	<= 0.1 %	
Molybdenum, Mo	4.5 - 5.2 %	4.5 - 5.2 %	
Nickel, Ni	17 - 19 %	17 - 19 %	
Phosphorous, P	<= 0.01 %	<= 0.01 %	
Silicon, Si	<= 0.1 %	<= 0.1 %	
Sulfur, S	<= 0.01 %	<= 0.01 %	
Titanium, Ti	0.6 - 0.8 %	0.6 - 0.8 %	

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