

## FloMet Fe-3% Si Soft Magnetic Alloy

Category : Metal , Electronic/Magnetic Alloy , Ferrous Metal , Superalloy

### Material Notes:

FloMet provides precision miniature components through metal injection molding (MIM). Metal powders are mixed with thermoplastic binders to form a homogeneous mixture, with approximately 60% volume metal powder and 40% volume plastic. The mixture (referred to as feedstock) is then injection molded at relatively low temperatures and pressures in conventional plastic injection molding machines. The molded green parts are then thermally processed in two steps. First, the binder is removed by evaporation in an operation called debinding. Next, the part is sintered in a dry hydrogen atmosphere, which densifies the part isotropically. The complex shape of the original molded part is retained throughout the process, and close tolerances can be achieved. Density is typically 95-98% of the wrought metal; mechanical properties and corrosion resistance are similar to wrought material. Information provided by FloMet LLC.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_FloMet-Fe-3-Si-Soft-Magnetic-Alloy.php](http://www.lookpolymers.com/polymer_FloMet-Fe-3-Si-Soft-Magnetic-Alloy.php)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	82	82	
Tensile Strength, Ultimate	483 MPa	70000 psi	
Tensile Strength, Yield	345 MPa @Strain 0.200 %	50000 psi @Strain 0.200 %	
Elongation at Break	20 %	20 %	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.050 %	<= 0.050 %	
Iron, Fe	97 %	97 %	As remainder
Silicon, Si	3.0 %	3.0 %	

Electrical Properties	Metric	English	Comments
Magnetic Permeability	<= 11300	<= 11300	$\hat{\mu}_{max}$ in G/Oe with a magnetizing field of 25 Oe.
Magnetic Coercive Force, Hc	0.55 Oe	0.55 Oe	
Magnetic Saturation Flux Density, Bmax	15100 Gauss	15100 Gauss	Magnetizing field of 25 Oe.
	19900 Gauss	19900 Gauss	Magnetizing field of 500 Oe.
Magnetic Remanence, Br	13200 Gauss	13200 Gauss	Magnetizing field of 25 Oe.

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