

# Kinetics

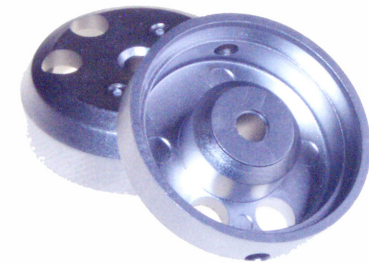
A Climax Engineered Materials Company

## MATERIALS & PROPERTIES

### MIM 2.5% SiFe as Sintered

Material Properties	Kinetics	
	Minimum	Typical
Ultimate Strength (KSI)	65	70
Yield Strength (KSI)	45	48.5
Elongation (% in 1")	20	24
Reduction in Area (%)	-	42.5
Surface Finish (Ra)	-	24
Impact Energy (ft-lbf) <sup>1</sup>	-	157
Macro Hardness (HRB)	-	81.5
Sintered Density (g/cm <sup>3</sup> )	-	7.61

<sup>1</sup>Test method uses 1/2 sized un-notched charpy bar.



### Material Description

Low alloy steel, silicon. A work hardenable steel alloy that offers very good magnetic properties, tensile strength, hardness, wear resistance, and increased spring steel strength. Can be plated or coated for corrosion resistance. Often used for armatures, relays, solenoids, and applications where good magnetic, low core loss and high electrical resistivity in AC and DC applications is required.

### Material Composition

Fe	Si	C (Max)
Balance	2.25-2.75	.06

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Updated on 1/17/2008

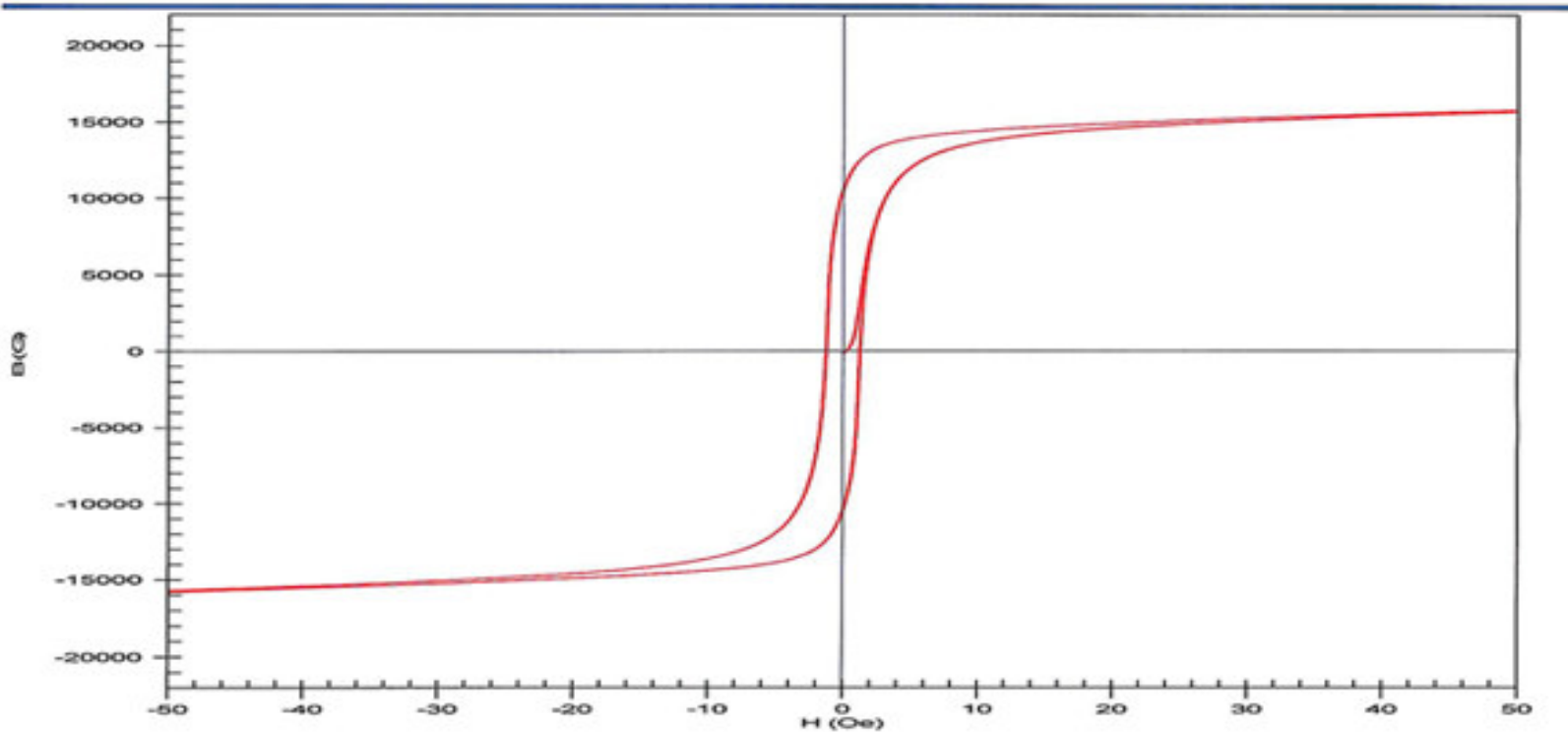
This information is subject to change with internal research and development

### MIM 2.5% SiFe as Sintered

### DC Test Summary

<b>Br</b>	<b>Hc</b>	<b>Max Permeability</b>	<b>B @ Max Permeability</b>	<b>H @ Max Permeability</b>
10491.844 Gauss (G)	1.2547 Oersted (Oe)	3592.1	7245.015 G	2.0169 Oe
<b>Max measured B</b>	<b>Max Measured H</b>	<b>Max Energy Product</b>	<b>Max. Demag B</b>	<b>Max Demag H</b>
20024.14 G	502.6806	5823.4 G*Oe	20299.213 G	94.7274 Oe

Test Data produced with grain size 6.0, toroid ring, annealed condition, using test procedure: ASTM A773/A773M-01



### MIM 2.5% SiFe as Sintered BH Curves

## Expanded Scale DC Test Summary

<u>Br</u>	<u>Hc</u>	<u>Max Permeability</u>	<u>B @ Max Permeability</u>	<u>H @ Max Permeability</u>
10491.844 Gauss (G)	1.2547 Oersted (Oe)	3592.1	7245.015 G	2.0169 Oe
<u>Max measured B</u>	<u>Max Measured H</u>	<u>Max Energy Product</u>	<u>Max. Demag B</u>	<u>Max Demag H</u>
20024.14 G	502.6806	5823.4 G*Oe	20299.213 G	94.7274 Oe

Test Data produced with grain size 6.0, toroid ring, annealed condition, using test procedure: ASTM A773/A773M-01

