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Iron-Silicon: SSI-3Si

Typical Magnetic Properties

	Grade ST		Grade MT	
Density, g/cm ³	6.90	7.05	7.25	7.40
Resistivity, $\mu\Omega$ -cm	46	44	44	43
Magnetic Induction, kG				
B ₁₅	11.6	12.2	13.8	14.3
B ₁₀₀	14.1	14.6	15.9	16.5
B ₅₀₀	-	-	17.9	18.3
Remanent Induction (B _r), kG	9.4	9.9	12.6	12.8
Coercive Force (H _c), Oe	1.64	1.63	0.77	0.60
Maximum Permeability (μ_{\max})	2500	2700	6600	8400

Typical Mechanical Properties

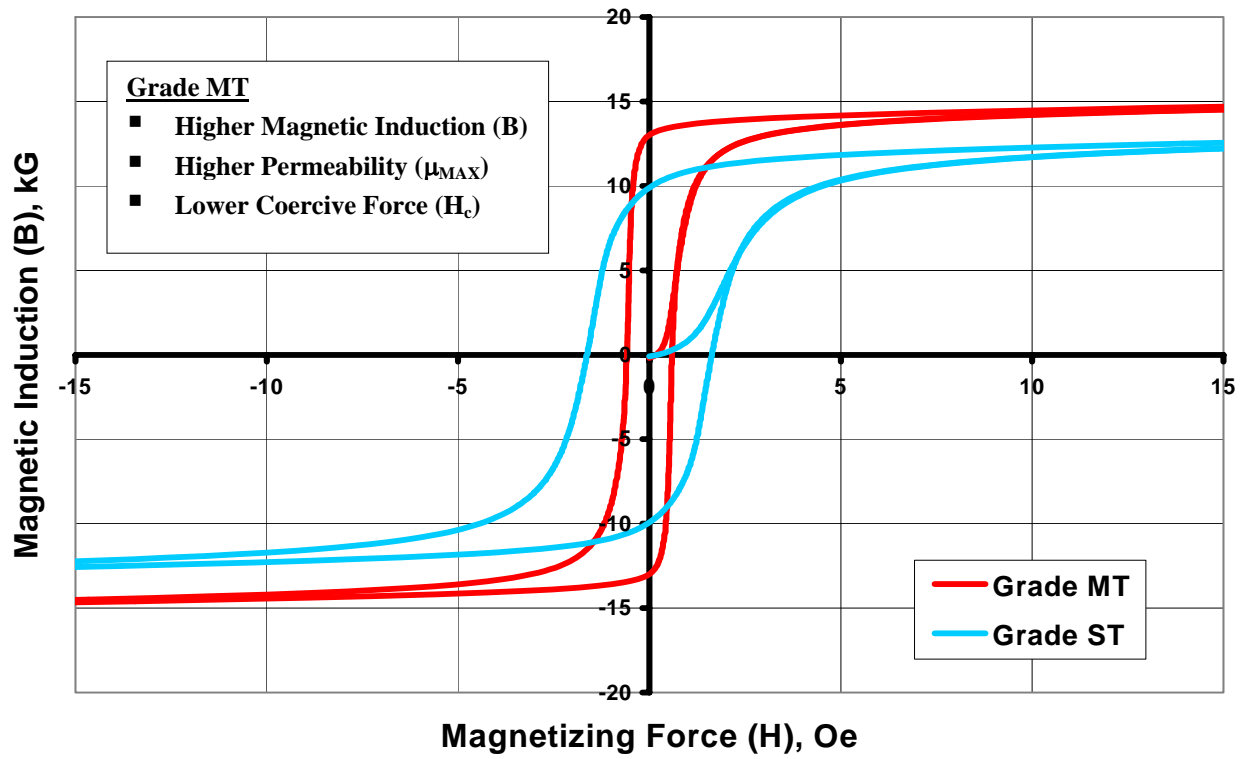
	Grade ST		Grade MT	
Density, g/cm ³	6.90	7.05	7.25	7.40
Ultimate Tensile Strength, 10 ³ psi	59	63	72	74
Yield Strength (0.2%), 10 ³ psi	45	48	51	53
Elongation (in 1.0 in.), percent	8	10	23	25
Elastic Modulus, x10 ⁶ psi	21.4	22.9	26.3	28.0
Poisson's Ratio	0.26	0.26	0.27	0.27
Impact Energy				
Charpy Unnotched, ft-lbf	30	45	>200 ¹	
Macrohardness (Apparent), HRB	62	69	77	81

¹ Too ductile to test unnotched.

The data presented in this bulletin are typical values, obtained from test specimens processed through production equipment. The data does not represent a guarantee of minimum or maximum values for the materials in actual parts, nor are they intended as warranties, express or implied, of fitness of material for use in any specific application.

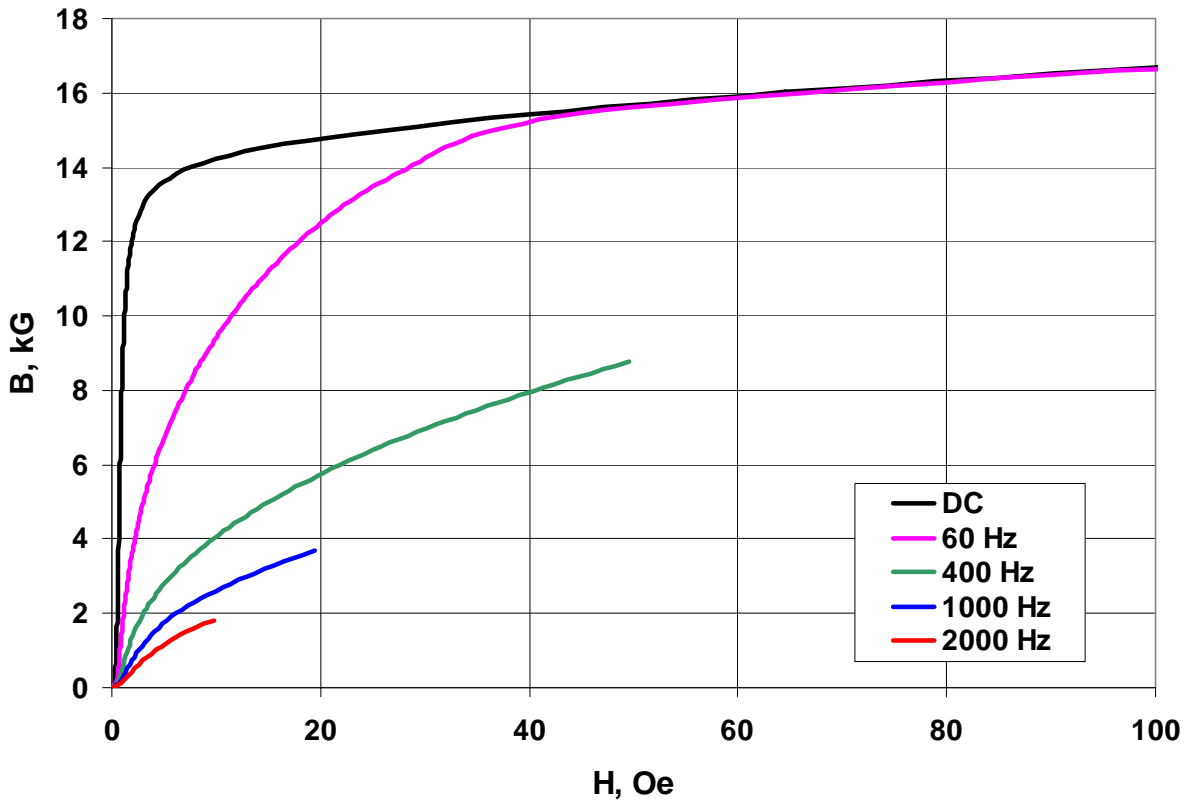
The Advantage of High Temperature Sintering

Grade MT vs. Grade ST



AC vs. DC Performance

Grade MT



Iron-Silicon: SSI-3Si

Typical Magnetic Properties

	Grade ST		Grade MT	
Density, g/cm ³	6.90	7.05	7.25	7.40
Resistivity, $\mu\Omega$ -cm	46	44	44	43
Magnetic Induction, Tesla				
B ₁₅	1.16	1.22	1.38	1.43
B ₁₀₀	1.41	1.46	1.59	1.65
B ₅₀₀	-	-	1.79	1.83
Remanent Induction (B _r), Tesla	0.94	0.99	1.26	1.28
Coercive Force (H _c), A/m	130	130	61	48
Maximum Permeability (μ_{\max})	2500	2700	6600	8400

Typical Mechanical Properties

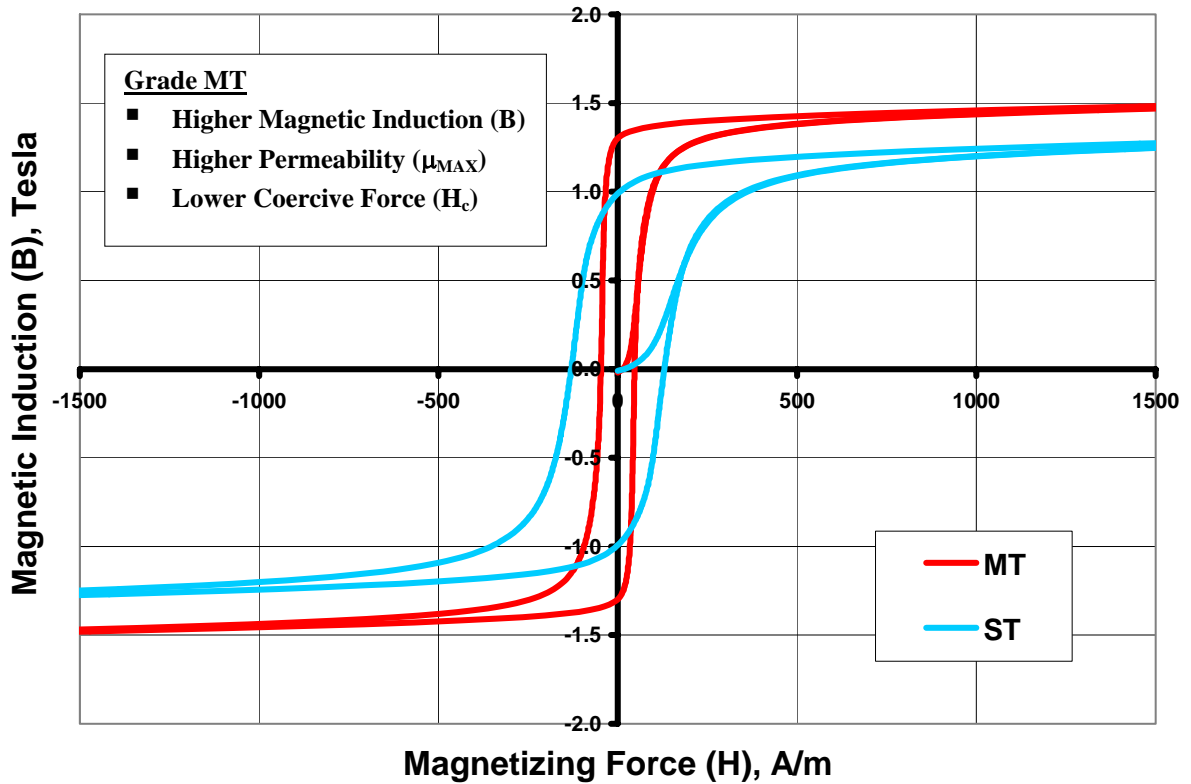
	Grade ST		Grade MT	
Density, g/cm ³	6.90	7.05	7.25	7.40
Ultimate Tensile Strength, MPa	407	434	496	510
Yield Strength (0.2%), 10 ³ MPa	310	331	352	365
Elongation (in 25 mm), %	8	10	23	25
Elastic Modulus, GPa	147	158	181	193
Poisson's Ratio	0.26	0.26	0.27	0.27
Impact Energy				
Charpy Unnotched, Joules	40	60	>270 ¹	
Macrohardness (Apparent), HRB	62	69	77	81

¹ Too ductile to test unnotched.

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Grade MT vs. Grade ST



AC vs. DC Performance

Grade MT

