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Iron-Phosphorus: SSI-45P

Typical Magnetic Properties

	Grade ST		Grade MT	
Density, g/cm^3	7.10	7.25	7.30	7.45
Resistivity, μΩ-cm	18	18	18	18
Magnetic Induction, kG				
B_{15}	12.1	13.0	14.0	14.4
B_{100}	14.5	15.5	16.2	16.9
B_{500}	-	-	-	-
Remanent Induction (B_r), kG	10.5	11.5	12.6	13.0
Coercive Force (H_c), Oe	1.9	1.9	0.8	0.7
Maximum Permeability (μ_{max})	2300	2500	6500	7500

Typical Mechanical Properties

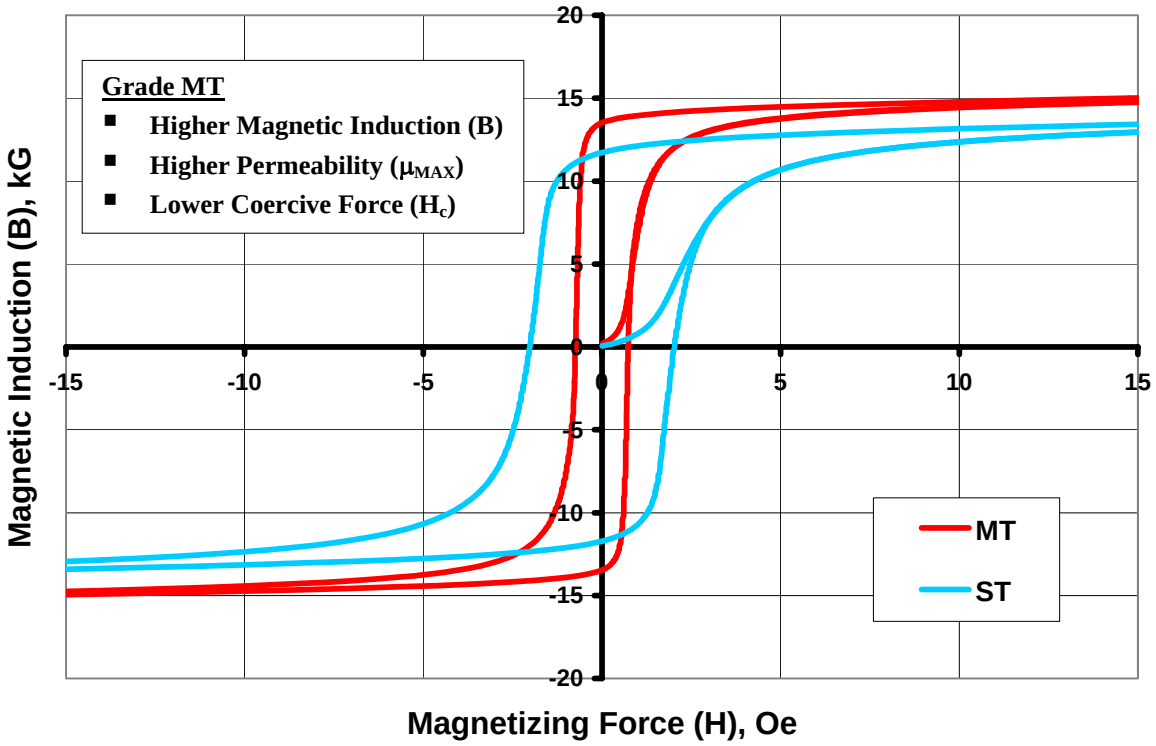
	Grade ST		Grade MT	
Density, g/cm^3	7.10	7.25	7.30	7.45
Ultimate Tensile Strength, 10^3 psi	55	60	60	62
Yield Strength (0.2%), 10^3 psi	40	43	39	40
Elongation (in 1.0 in.), percent	11	14	25	26
Elastic Modulus, x10^6 psi	23.5	25.0	27.0	27.5
Poisson's Ratio	0.26	0.26	0.27	0.27
Impact Energy				
Charpy Unnotched, ft-lbf	60	70	>200[1]	
Macrohardness (Apparent), HRB	58	66	64	68

[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.

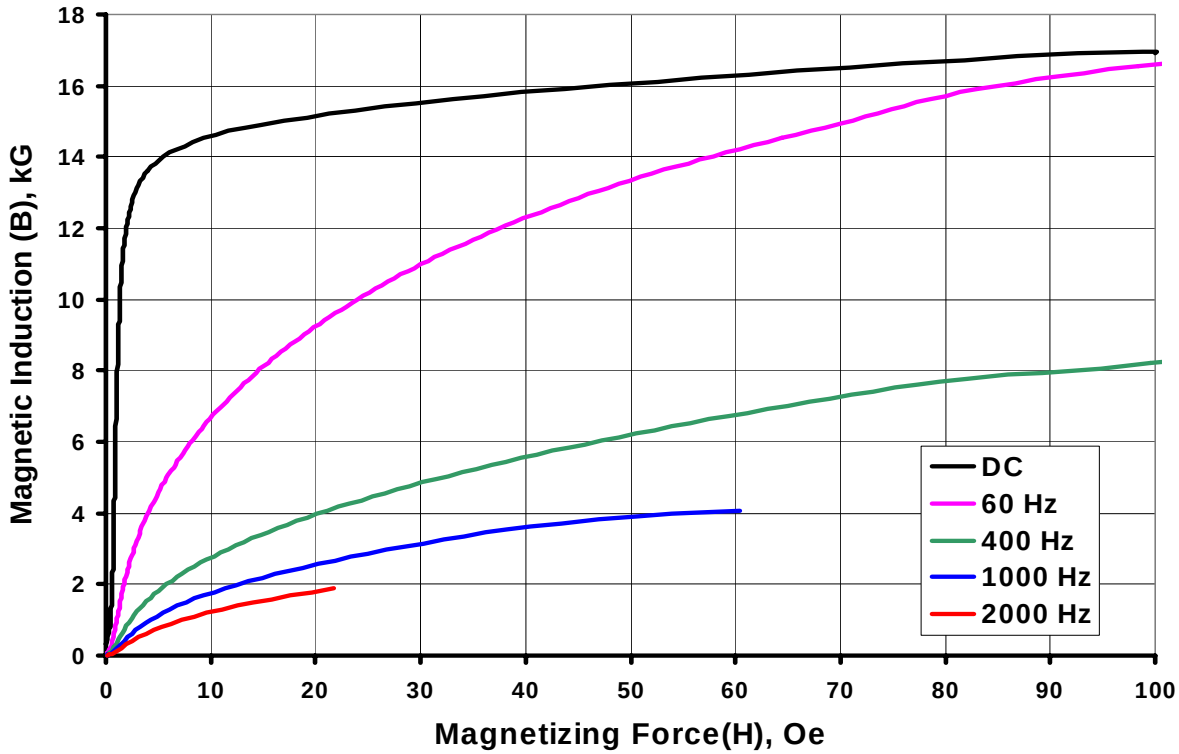
The Advantage of High Temperature Sintering

Grade MT vs. Grade ST



AC vs. DC Performance

Grade MT



Iron-Phosphorus: SSI-45P

Typical Magnetic Properties

	Grade ST		Grade MT	
Density, g/cm^3	7.10	7.25	7.30	7.45
Resistivity, μΩ-cm	18	18	18	18
Magnetic Induction, Tesla				
B_{15}	1.21	1.30	1.40	1.44
B_{100}	1.45	1.55	1.62	1.69
B_{500}	-	-	-	-
Remanent Induction (B_r), Tesla	1.05	1.15	1.26	1.30
Coercive Force (H_c), A/m	150	150	64	55
Maximum Permeability (μ_{max})	2300	2500	6500	7500

Typical Mechanical Properties

	Grade ST		Grade MT	
Density, g/cm^3	7.10	7.25	7.30	7.45
Ultimate Tensile Strength, MPa	380	415	415	425
Yield Strength (0.2%), 10^3 MPa	275	295	270	275
Elongation (in 25 mm), %	11	14	25	26
Elastic Modulus, GPa	162	172	186	190
Poisson's Ratio	0.26	0.26	0.27	0.27
Impact Energy				
Charpy Unnotched, Joules	80	95	>270[1]	
Macrohardness (Apparent), HRB	62	69	77	81

[1] Too ductile to test unnotched.

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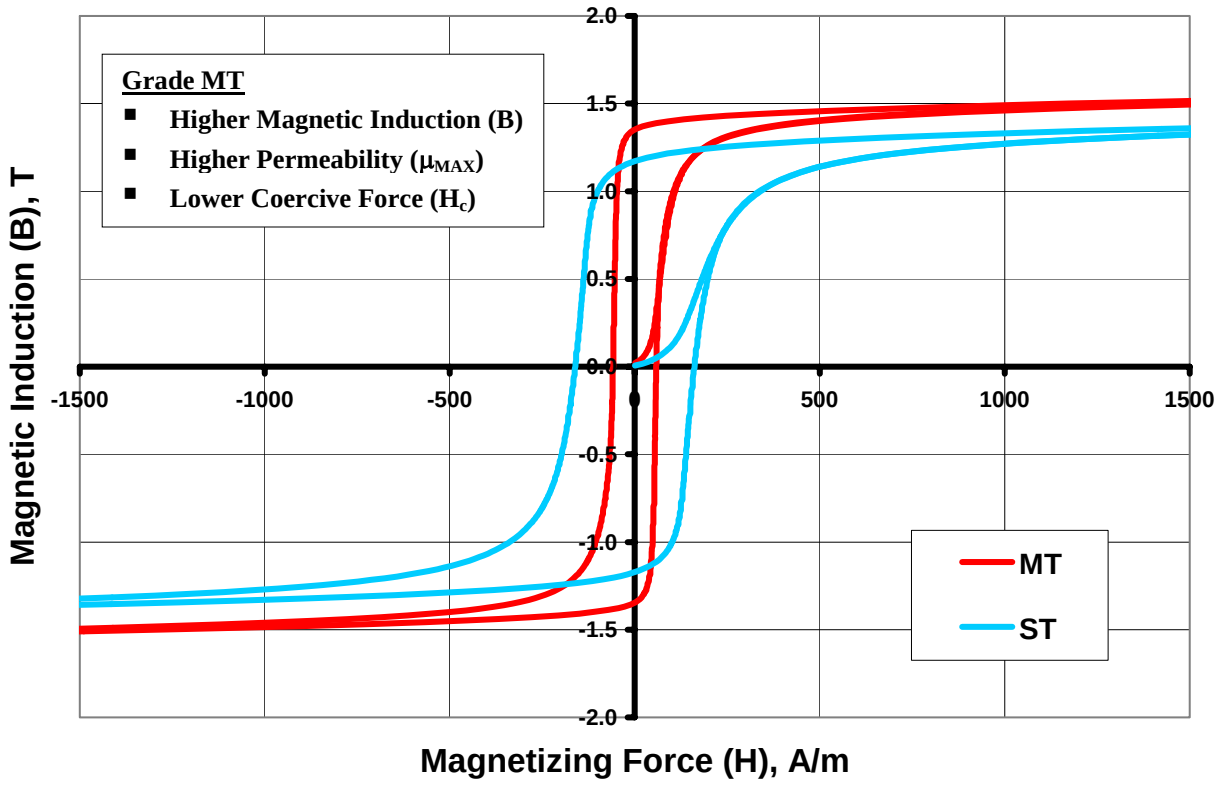
Grade MT vs. Grade ST



AC vs. DC Performance

Grade MT