Applications
• Current transformers
• Ground fault protection devices
• High frequency cores

Benefits
• Low core loss at high frequencies (>1 kHz)
• High operating temperature with minimal flux density reduction
• Can be annealed for high permeability in low or high frequencies

Typical Impedance Permeability Curves, Various Field Anneal

Physical Properties
Density (g/cm³) ................. 7.29
Vicker's Hardness (50g Load) ................. 860
Tensile Strength (GPa) ................... 1.2
Elastic Modulus (GPa) ............100-110
Lamination Factor (%) ........... >75
Thermal Expansion (ppm/°C) ........ 6.7
Crystallization Temperature (°C) ........ 535
Continuous Service Temp. (°C) ........ 150

Magnetic Properties
Saturation Induction (T) ................. 1.41
Maximum D.C. Permeability (µ):
Annealed ......................... 35,000
As Cast ......................... >20,000
Saturation Magnetostriction (ppm) ........... 0.20
Electrical Resistivity (µ-cm) ........... 138
Curie Temperature (°C) ................. 358

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1-800-581-7654
ref:2605S3A03112009
Typical Core Loss Curves, Longitudinal Field Anneal
METGLAS Alloy 2605S3A
Applications
• Distribution and power transformers
• Motors
• High frequency inductors
• Current transformers
• Devices requiring high permeability and low loss at low frequencies

Benefits
• Extremely low core loss – less than 0.29 w/kg at 60 Hz, 1.35 Tesla, or 40% of the core loss of grade M3 electrical steel (core loss at 50 Hz is approximately 80% of 60 Hz values). This is for finished cores.
• High permeability

Typical Impedance Permeability Curves, Longitudinal Field Anneal

Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (g/cm³) As Cast</td>
<td>7.18</td>
</tr>
<tr>
<td>Vicker’s Hardness (50g load)</td>
<td>900</td>
</tr>
<tr>
<td>Tensil Strength (GPa)</td>
<td>1-2</td>
</tr>
<tr>
<td>Elastic Modulus (GPa)</td>
<td>100-110</td>
</tr>
<tr>
<td>Lamination Factor (%)</td>
<td>&gt;82</td>
</tr>
<tr>
<td>Thermal Expansion (ppm/°C)</td>
<td>7.6</td>
</tr>
<tr>
<td>Crystallization Temperature (°C)</td>
<td>508</td>
</tr>
<tr>
<td>Continuous Service Temp. (°C)</td>
<td>150</td>
</tr>
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</table>

Magnetic Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturation Induction (T) As Cast</td>
<td>1.56</td>
</tr>
<tr>
<td>Maximum D.C. Permeability (μ):</td>
<td></td>
</tr>
<tr>
<td>Annealed</td>
<td>600,000</td>
</tr>
<tr>
<td>As Cast</td>
<td>45,000</td>
</tr>
<tr>
<td>Saturation Magnetostriction (ppm)</td>
<td>0.27</td>
</tr>
<tr>
<td>Electrical Resistivity (μΩ.cm)</td>
<td>0.130</td>
</tr>
<tr>
<td>Curie Temperature (°C)</td>
<td>0.399</td>
</tr>
</tbody>
</table>
Typical Core Loss Curves, Longitudinal Field Anneal
METGLAS Alloy 2605SA1
Applications

- Flexible electromagnetic shielding
- Magnetic sensors
- High frequency cores

Benefits

- Near-zero magnetostriction
- High DC permeability at low fields without annealing
- High tensile strength

Physical Properties

- Density (g/cm³) .................. 7.80
- Vicker’s Hardness (50g load) ........ 900
- Tensil Strength (GPa) ................ 1.2
- Elastic Modulus (GPa) .............. 100-110
- Lamination Factor (%) ............... >75
- Thermal Expansion (ppm/°C) ....... 12.1
- Crystallization Temperature (°C) ... 520
- Continuous Service Temp. (°C) .... .90

Magnetic Properties

- Saturation Induction (T) ............... 0.77
- Maximum D.C. Permeability (µ):
  - Annealed .................. 600,000
  - As Cast ........................ 290,000
- Saturation Magnetostriction (ppm) ...... <0.5
- Electrical Resistivity (μΩ.cm) .......... 136
- Curie Temperature (°C) ............... 365
Notes:

Contact Information:

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Applications

- Switch-mode power supply applications
- High frequency transformers
- High sensitivity matching transformers
- Ultra-sensitive current transformers
- Shielding
- Sensor applications

Benefits

- Extremely low core loss
- Ultra-high permeability
- High squareness ratio – low coercive force
- Near-zero magnetostriction
- Excellent corrosion resistance

Physical Properties

- Density (g/cm³) ................. 7.59
- Vicker’s Hardness (50g load) ........... .960
- Tensil Strength (GPa) ............ .1-2
- Elastic Modulus (GPa) .............. .100-110
- Lamination Factor (%) .............. >75
- Thermal Expansion (ppm/°C) ........ .12.7
- Crystallization Temperature (°C) ........ .550
- Continuous Service Temp. (°C) ........ .90

Magnetic Properties

- Saturation Induction (T) ................. .0.57
- Maximum D.C. Permeability (µ):
  - Annealed ................. 1,000,000
  - As Cast ................. >80,000
- Saturation Magnetostriction (ppm) ....... <0.5
- Electrical Resistivity (µΩ.cm) ........ .142
- Curie Temperature (°C) ................. .225
Typical Core Loss Curves
Metglas Alloy 2714A
Applications

- Field sensors
- Shielding applications
- High frequency cores

Benefits

- Medium saturation induction
- Lower magnetostriction
- Higher corrosion resistance
- Can be annealed for very high DC permeability, rounded or square B-H loops

Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (g/cm³)</td>
<td>7.90</td>
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<tr>
<td>Vicker’s Hardness (50g load)</td>
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<tr>
<td>Tensil Strength (GPa)</td>
<td>1.2</td>
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<tr>
<td>Elastic Modulus (GPa)</td>
<td>100-110</td>
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<tr>
<td>Lamination Factor (%)</td>
<td>&gt;75</td>
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<td>Thermal Expansion (ppm/°C)</td>
<td>11.7</td>
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<tr>
<td>Crystallization Temperature (°C)</td>
<td>410</td>
</tr>
<tr>
<td>Continuous Service Temp. (°C)</td>
<td>125</td>
</tr>
</tbody>
</table>

Magnetic Properties

- Saturation Induction (T): 0.88
- Maximum D.C. Permeability (µ):
  - Annealed: 800,000
  - As Cast: >50,000
- Saturation Magnetostriction (ppm): 0.12
- Electrical Resistivity (µΩ.cm): 138
- Curie Temperature (°C): 353
Typical Core Loss Curves, Longitudinal Field Anneal
METGLAS Alloy 2826MB