

# Iron Silicon Phosphorus $\text{FeSi}_2\text{P}_{0.45}$

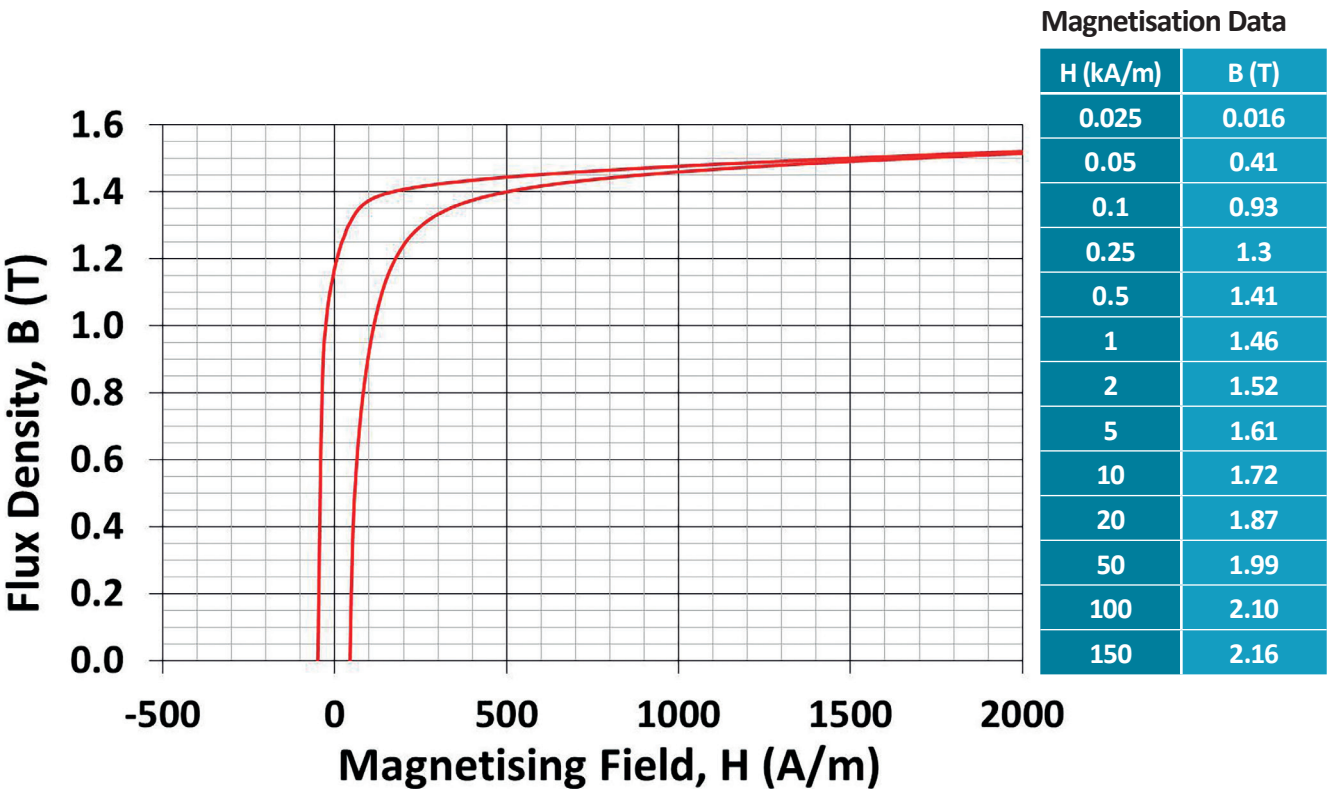
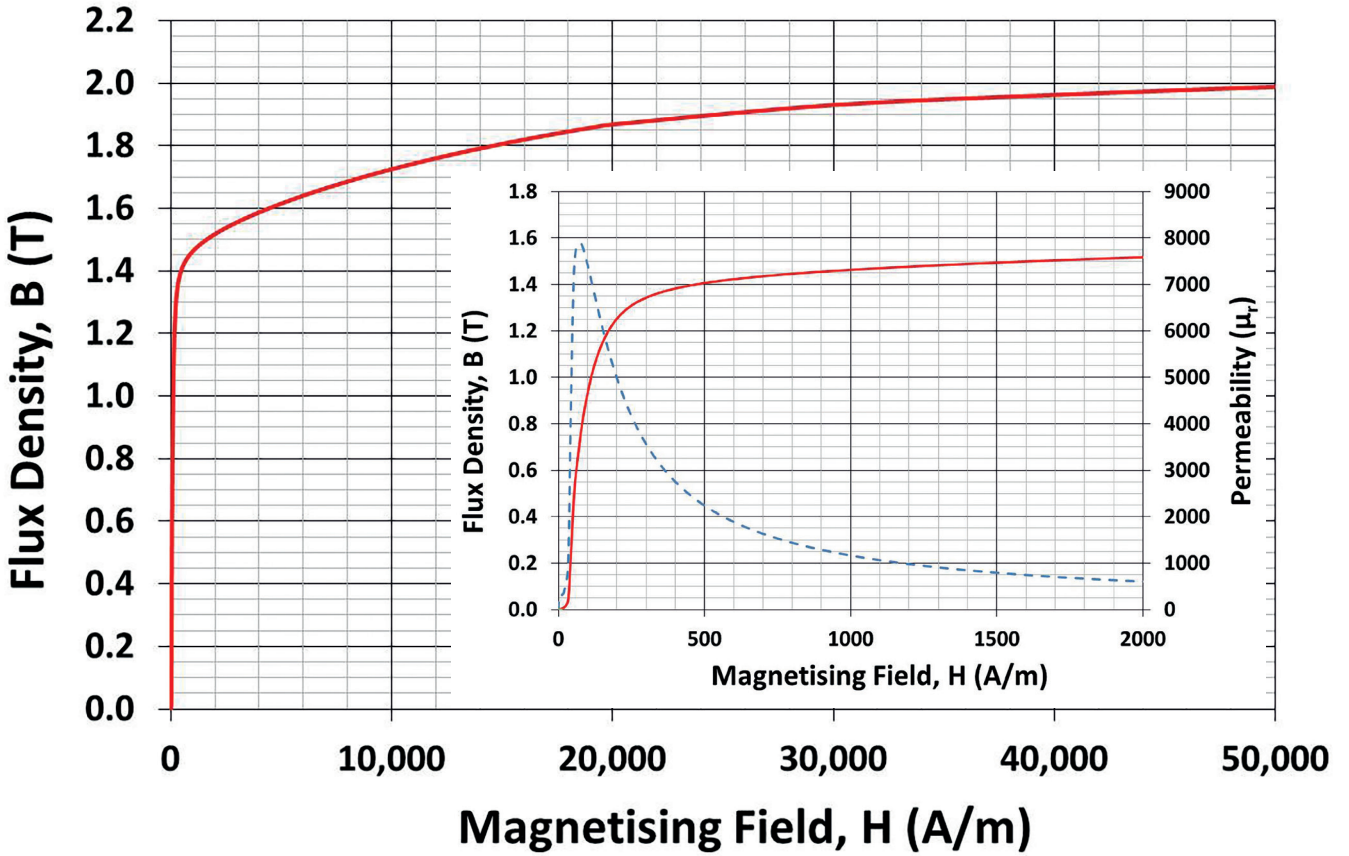
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Product data sheet



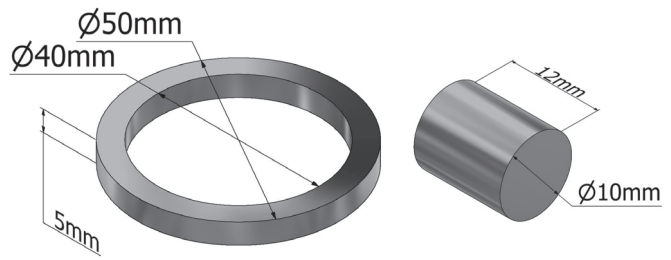
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## ➤ Magnetic Properties



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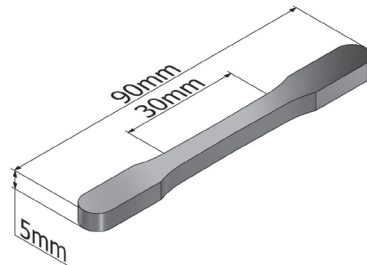
Jsat	1.98 T
Max Permeability ( $\mu$ max)	7,900
Remanence (Br)	1.16 T
Coercivity (Hc)	45 A/m
Resistivity	45 $\mu\Omega$ .cm



Ring used to obtain magnetic data and test bar used to obtain high field data

## ➤ Mechanical Properties†

Yield Strength, $R_{p0.2}$	385 MPa
Tensile Strength, $R_m$	530 MPa
Elongation at Fracture, A	12%
Hardness	220 $Hv_{30}$



Dog Bone used for Tensile Testing

## ➤ General Properties

Density ( $\rho$ )	7.55 g/cm <sup>3</sup>
Electrical Conductivity	2.5x10 <sup>6</sup> S/m
Corrosion Resistance	Low
Thermal Expansion	~12x10 <sup>-6</sup> /K

## ➤ Further Information

Iron Silicon Phosphorus, FeSiP, is ideal for applications in passenger car or commercial diesel injection solenoids. The DC and AC magnetic properties are consistent within and between batches of parts and the forming technology leads to very efficient use of raw material.

SG Technologies produces components using proprietary Ultra High Density moulding and heat treatment. These processes may be followed by grinding, machining and deburring. The parts we produce in this way may need

further annealing depending on the degree of secondary operations. All the Ultra High Density [UHD] sintered materials from SGTec respond well to electron beam and laser welding.

**Individual components** can be tested using our magnetic component verification techniques. This assures quality control for transient electromagnetic performance.

\*Determined following IEC404-4.

†Determined following MPIF standard 10 tensile test bar

For all further information and data regarding the production of finished parts please contact us at SG Technologies:

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