kite magnetics™

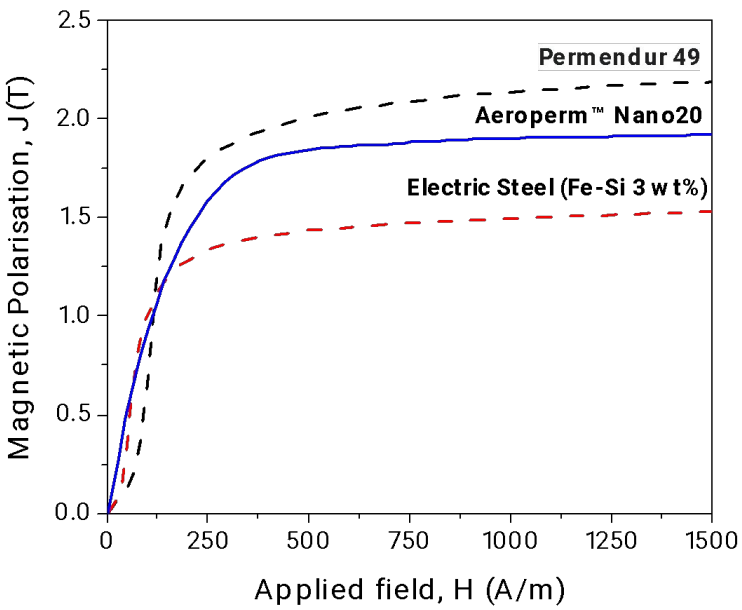
Aeroperm™

Nano20

More torque. Less heat.

Aeroperm™ is the world's first 2 Tesla ultra-low core loss nanocrystalline magnetically soft core material specifically designed for high-performance electric motors and generators.

Material Properties	
Saturation Magnetic Polarization (J_s)	**2.00 T**
Coercivity (H_c)	8.8 A/m
Electrical Resistivity (ρ_{el})	52 µΩ.cm
Density (ρ)	7.70 g/cm^3
Saturation magnetostriction (λ_s)	30 ppm
Curie Temperature (T_c)	>527 °C
Continuous Service Temperature (T_{max})	130 °C
Lamination thickness (t_{lam})	24 µm
Typical stacking factor (L_m)	>87 %



Kite Magnetics Aeroperm™ series of nanocrystalline soft magnetic alloys offer core losses up to one-tenth that of conventional non-oriented 3 wt % iron-silicon steels without sacrificing saturation magnetic polarisation.

An ultra-low core loss is made possible due to the unique microstructure of nanocrystalline alloys, their low thickness and relatively high electrical resistivity.

Aeroperm™ is the world's first nanocrystalline alloy to exceed a saturation magnetic polarisation of 2 Tesla, making it directly comparable with conventional iron-silicon steels, enabling a new generation of high specific power density electric machines.

Using Kite Magnetics proprietary production process nanocrystalline ferromagnetic cores can be produced in a range of required geometries and are resistant to mechanical damage.

For additional information, please contact: info@kitemagnetics.com or visit kitemagnetics.com

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Insulation System

Thermally cured insulation coatings are available on request.

Form of Delivery

Ready to use cores can be supplied based on customer specifications. This includes the supply of block cores, wound cores (c-core and toroidal) or cores for electric motors. Unprocessed laminations (ribbon) are not available.

Corrosion resistance

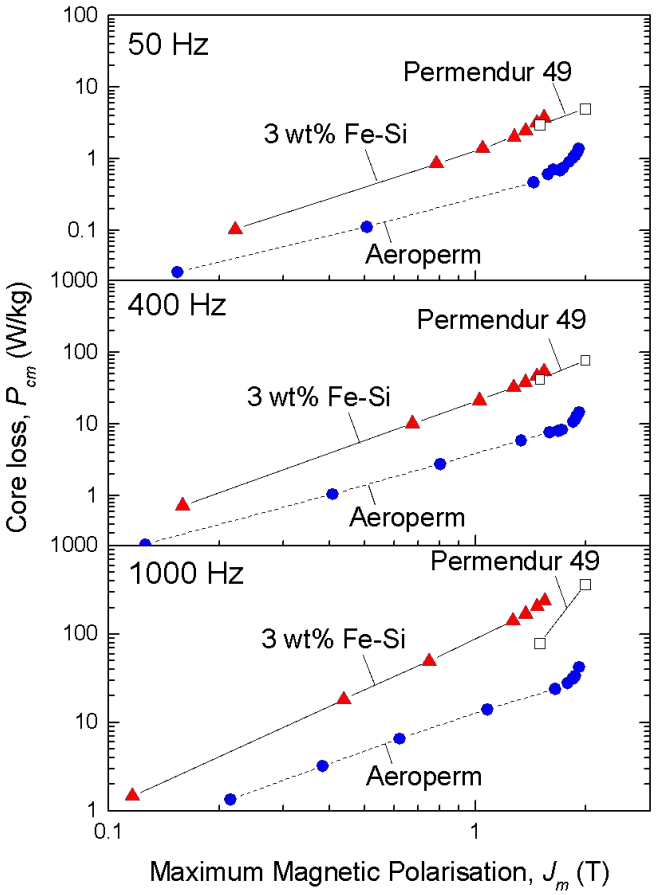
Aeroperm™ is a chromium-free iron-based alloy and so a finish coating is required for corrosion resistance. This is applied prior to delivery of finished cores.

Material handling

To maintain ideal magnetic properties, it is important to avoid exposing finished cores to mechanical stress and temperatures exceeding the maximum service temperature.

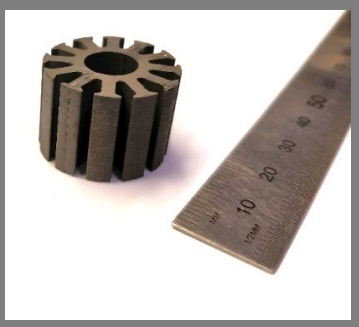
Recycling

Further details about our Aeroperm™ recycling program on request.



Applications include:

- High-performance electric motors and generators
- Medium frequency transformers
- Other high-performance laminated-core components



	1.0 T	1.5 T	1.8 T
Core Loss at 50 Hz (P_{cm})	0.28 W/KG	0.50 W/KG	0.91 W/kg
Core Loss at 400 Hz (P_{cm})	3.83 W/KG	6.90 W/KG	9.35 W/kg
Core Loss at 1000 Hz (P_{cm})	12.7 W/KG	20.6 W/KG	27.8 W/kg

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