



The power inductors, transformers, and motors need better materials technology for miniaturization and improving efficiency. However, currently available technologies have limitations on how much miniaturization they can provide without compromising efficiency.

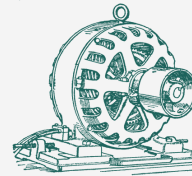
Electrification of vehicles and aircraft, the increased demand for data centers, renewable energy, and consumer electronics demand a better electromagnetic technology for smaller, lighter, and more efficient solutions.

The technology will enable better power converters, motors, pumps, generators, power inductors, actuators, and solenoids.

Applications



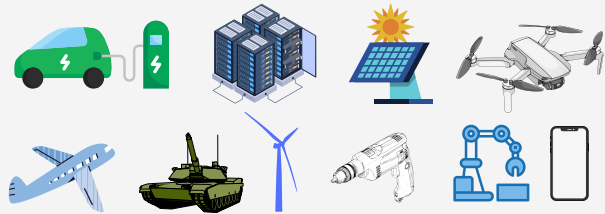
Inductor



Motor



Transformer



CleanMag™ Technology



We are commercializing a novel magnetic materials technology, CleanMag™.

CleanMag™ is available as:

- Powder
- Magnetic core
- Coil/Lamination

The CleanMag™ technology solution is derived using a set of proprietary compositions of Iron or Iron alloys. The proprietary compositions increase the resistivity of the material, thus reducing the eddy current loss and hence, increasing efficiency. The CleanMag™ will enable a 20-25% reduction in core loss and 25-50% reduction in inductor size relative to Sendust and Iron-Nickel 50, the most used metallic powder core in power systems.

CleanMag™ reduces the core loss and provides high magnetic induction, simultaneously, relative to Iron-based alloys such as Sendust, Iron Nickel, Amorphous, etc.



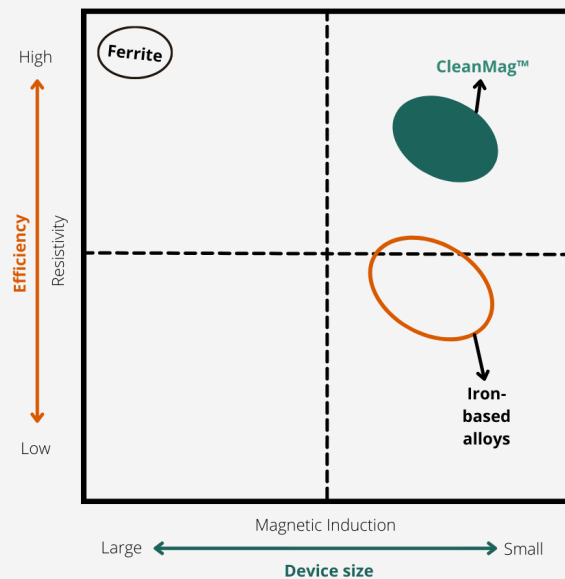
Powder



Core



Lamination



200 POWDER MILL RD,
WILMINGTON, DE 19803, USA



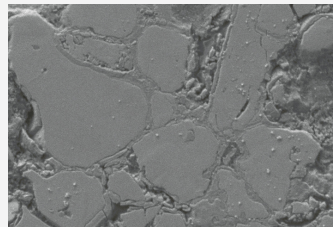
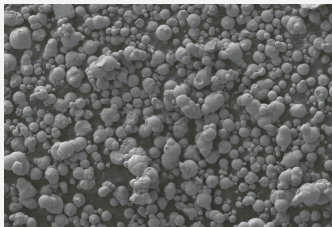
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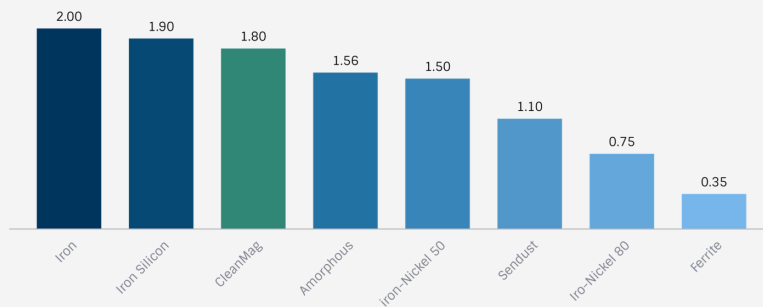


CleanMag™ Technology



CleanMag™ powder is developed with a scalable process. The magnetic cores have application in medium to high-frequency inductors, chokes, and transformers. CleanMag™ powders are made in different sizes to cater to different market needs- larger particles for motor SMC and smaller particles for power inductors and transformers.

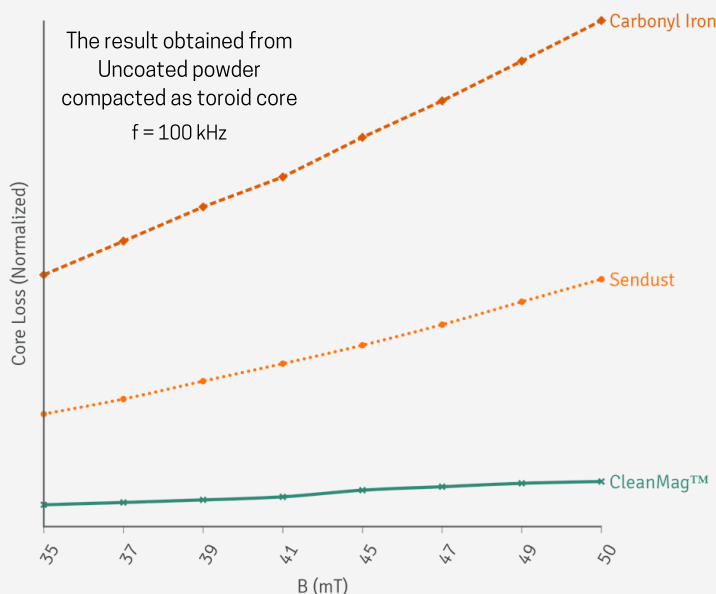
Magnetic Induction



The CleanMag™ powder produces higher magnetic induction than other Iron-based alloys such as Sendust, Amorphous, Iron-Nickel, and Nanocrystalline. The higher magnetic induction enables a smaller device size or smaller current need for a similar size device.

A reduction in the current (Amp) for the same size device would reduce winding loss and make the device cooler. Additionally, it would enable an improved machine life and low cost of ownership.

Core Loss



The core loss of CleanMag™ core is smaller relative to Sendust and Carbonyl Iron due to lower eddy current loss. The toroid cores made from uncoated powders demonstrated a significant improvement in core loss from CleanMag™ magnetic core. The smaller magnetic core loss will enable a more efficient power inductor and transformer.

CleanMag™ cores are more corrosion resistant than the other Iron-based alloys.

CleanMag™ cores and CleanMag™ powder are available for trial order. Order here:

