



NOVAMET

Electromagnetic Materials

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Novamet's electromagnetic materials are used extensively in electronic applications and for magnetic shielding. Several ferromagnetic alloy powders with a wide range of magnetic properties are available in various aspect ratios from nearly spherical to nearly flat for use in coatings.

Applications

- Conductive coatings, tapes, screen printed inks, adhesives, and films
- Molded sheets and extruded gaskets for electronic enclosures
- EMI shielding
- RF and microwave absorption

The Advantages of Nickel

Nickel powders, such as NiFL, are extremely resistant to oxidation and corrosion and maintain high conductivity and magnetic saturation over a long period of time.

The Advantages of Permalloy

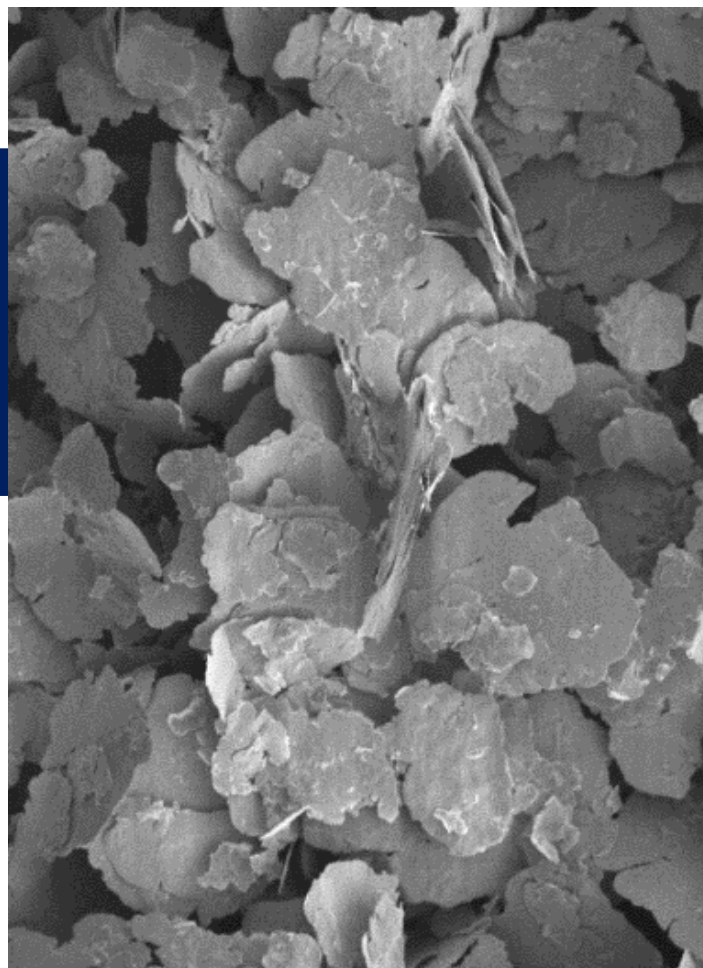
Permalloys are Ni-Fe alloys with 35-90 wt.% Ni. They may also contain Mo, Cu, and/or Cr. Permalloy powders have low coercivities and extremely high magnetic permeabilities, so they are very effective at diverting magnetic fields around sensitive components.

The Advantages of Iron

Carbonyl iron powders (CIP) have very high magnetic permeability and magnetic saturation but very low coercivity, so they respond quickly to changing electromagnetic fields.

The Advantages of Stainless Steel

Stainless steels combine excellent corrosion resistance with outstanding abrasion resistance and toughness. Bulk 316L is generally considered non-magnetic, but SSFW has measurable magnetic saturation due to its high aspect ratio particles.



	NiFL	2-81 Mo Permalloy	CIP	SSFW
d50 Particle Size, μm	20	40	6	40
Thickness, μm	0.5	0.5	N/A	0.6
Apparent Density, g/cm^3	0.6	0.5	3.3	0.6
Bulk Permeability	1,000	550,000	230,000	1
Mag. Sat., T	0.60	0.88	2.07	0.07
Coercivity, A/m	6,200	440	20	20,000
Chemistry, Wt.%				
Fe	0.0	15.6	Bal.	Bal.
Mo	-	2.1	-	2.2
Ni	Bal.	Bal.	-	13.6
C	0.5	0.3	0.7	0.5
O	0.4	0.5	0.2	0.4



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NOVAMET Specialty Metal Flakes, Powders, Pigments, Oxides and Coated Products