

Soft Magnetic Compounds for Bonded Magnet

Filler Shape	Filler	Resin	Grade	Electromagnetic Properties					Physical Properties			
				Magnetic Permeability u' at 1MHz		Hc		Bs	Surface Resistivity (at10V)	Molded Density (ASTM D-792)	MFR (Melt Flow Rate)	
				φ13-8mm t5mm	φ20-10mm t0.6mm	φ13-8mm t5mm	φ20-10mm t0.6mm				g/cm3	g/10min
				-		A/m		T	Ω/□			
Sphere	FeSi	PPS	TM-6S65	14.9		285		1.18	≥10 ⁶	5.3	2903	330°Cx60kg
	Fe-Amorphous	PPS	TM-6E65	12.5		95		0.86		5.0	1918	
	Nanocrystal	PPS	TM-6A65	15.0		70		0.65		5.0	1070	
Flake	FeSiAl	Nylon 6	TS-1S35	25.0	45.0	225	170	0.32	≥10 ⁶	3.1	1500	280°Cx60kg
		Nylon 12	TS-2S50C	44.0	94.0	235	175	0.45		3.9	806	280°Cx60kg
		Thermal resistant Nylon	TS-3S50	39.0	74.0	245	185	0.45		3.9	359	330°Cx60kg
		PPS	TS-6S50	30.0	60.0	315	225	0.45		3.9	109	330°Cx60kg
	FeSiCr	Nylon 6	TS-1J35	22.0	36.0	440	340	0.35		3.2	773	280°Cx60kg
		Nylon 12	TS-2J50C	24.0	43.0	620	480	0.50		3.9	276	280°Cx60kg

Values are typical and not guaranteed

Measurement Method(Equipment,Condition etc.)

Permeability:Impedance Analyzer(Agilent E4991A,16454A Fixture)

Hc:Tohoku Steel Co.,LTD. Hc Meter K-HC1000

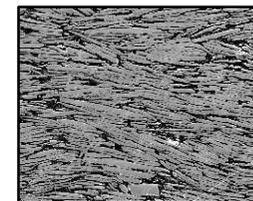
Bs:Magnetic Filed:30kOe,dimension of specimen:φ10xt5mm

MFR: Flow Tester(orifice:φ1-L2mm,preheating time 1min.)

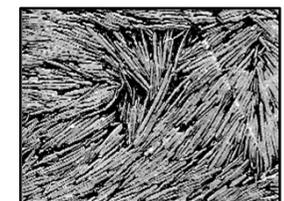
Notice About Flake Powder

- Permeability and Hc are much influenced by orientation of flake powder in a molded part, its orientation should be controlled carefully.

- Dimensions of a molded part, e.g. thickness influence a lot on its performance.
(easily magnetized direction: in-plate direction of powder)



Cross section of a film (10.6mm)
well oriented



Cross section of a thick part: (15mm)
not well oriented