

Ferrite Magnets (SrFe)

Sintex a/s supplies both sintered and polymer-bonded permanent magnets. All magnets are customised - or in other words - magnets are developed and manufactured on the basis of a customers sketch.

Ferrite types

Within ferrite magnets, we supply both sintered and polymer-bonded magnets.

There are two different mixtures within ferrites - SrFe and BaFe. BaFe is usually more economical and less powerful than SrFe, but SrFe is approved for use in drinking water applications whereas BaFe with Barium is problematic. We have therefore chosen only to supply SrFe ferrite magnets.

Ferrite magnets are sintered at high temperatures, which make them extremely hard and resistive against high operating temperatures.

Possibilities and advantages

Ferrite magnets are specially qualified for high temperature and corrosive environments. The advantages of ferrites are:

- Can withstand temperatures up to 250°C
- High corrosion resistance
- Economical solution

The magnets are however not powerful – the magnetic strength and resistance against demagnetisation is low compared to neodymium magnets and samarium cobalt magnets.

Magnetic properties

Name	Remanens Br		Hcb		Hci	(BH) Max		Work. Temp.		Temp. Coeff.		Myr
	Typ.	Tol.	Typ.	Tol.	Min.	Typ.	Min.	Min.	Max.	of Br	of Hc	
	[T]	[T]	[kA/m]	[kA/m]	[kA/m]	[kJ/m³]	[kJ/m³]	[°C]	[°C]	[%/K]	[%/K]	
F398-150	0.398	0.007	160	15	150	29.5	28.0	0	225	-0.2	-0.2 to -0.5	1.15
F425-219	0.425	0.010	227	12	219	34.4	31.2	-17	225	-0.2	-0.2 to -0.5	1.15
F235-210	0.235	0.035	160	35	210	9.5	6.5	-40	250	-0.2	-0.2 to -0.5	1.17
F380-140	0.380	0.060	190	55	140	22.0	18.0	0	250	-0.2	-0.2 to -0.5	1.15
F360-280	0.360	0.050	250	30	280	25.4	20.0	-40	250	-0.2	-0.2 to -0.5	1.15
F370-190	0.370	0.050	190	20	190	25.4	20.0	-35	250	-0.2	-0.2 to -0.5	1.15
F400-140	0.400	0.040	170	35	140	28.0	22.5	0	250	-0.2	-0.2 to -0.5	1.15
F390-225	0.390	0.030	250	30	225	28.0	23.0	-40	250	-0.2	-0.2 to -0.5	1.15
F420-180	0.420	0.040	216	56	180	29.5	26.3	0	250	-0.2	-0.2 to -0.5	1.15
F400-210	0.400	0.030	250	45	210	29.5	25.0	-28	250	-0.2	-0.2 to -0.5	1.15
F400-247	0.400	0.040	266	27	247	29.5	24.0	-40	250	-0.2	-0.2 to -0.5	1.15
F400-180	0.400	0.030	210	35	180	30.0	26.0	-3	250	-0.2	-0.2 to -0.5	1.15
F400-235	0.400	0.020	275	45	235	32.0	27.0	-40	250	-0.2	-0.2 to -0.5	1.15
F415-310	0.415	0.020	300	25	310	32.5	28.5	-40	250	-0.2	-0.2 to -0.5	1.10
F420-165	0.420	0.020	190	30	165	33.5	30.0	0	250	-0.2	-0.2 to -0.5	1.15
F430-225	0.430	0.020	250	30	225	35.0	31.5	-23	250	-0.2	-0.2 to -0.5	1.15

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Mechanical properties

Name	Density	Vickers Hardness	Coeff. of thermal expansion	Electrical resistivity
	[g/cm ³]	[Hv]	[1/K]	[Ωcm]
All	4.80	480-580	7E-6 to 15E-6	>106

Characterising magnets

The most important properties to take into consideration for characterising the magnets are:

- Magnetic properties such as remanence Br, coercivity Hcb, intrinsic coercivity Hci and max. energy product (BH) max.
- Dimensions and tolerances
- Force (for holding magnets), Torque (for motors), Field strength (for sensors)
- Minimum and maximum operation / working temp.
- Area of application usage - e.g. aquatic environment
- Requirements concerning surface coating

Results

The magnetic and mechanical data shown in this data sheet are the result of tests and calculations done on untreated magnet blocks.

Before you use the information and results, you are encouraged to seek personal assistance and advice from our magnet specialists.

Please contact us for more information.

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