

Under
Development



Soft magnetic ferrite product

Epoxy-based Magnetic Adhesive

FEATURES

Epoxy-based magnetic adhesives are pasty products produced by mixing TODA KOGYO soft ferrite powders and epoxy resins. These adhesives can reduce the deterioration of magnetic properties due to magnetic flux leakage by filling the voids in the magnetic parts. Consequently, their inductance can be improved in addition to the downsizing and low profile of the components, by using them for the encapsulation of wire-wound inductors and noise suppression.

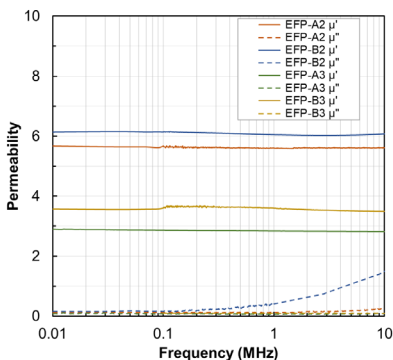
CHARACTERISTICS

- High permeability**
They show excellent permeability due to the high filling of soft ferrite powders.
- Superior fluidity**
They are paste that show high fluidity as using well-dispersible soft ferrite powders.

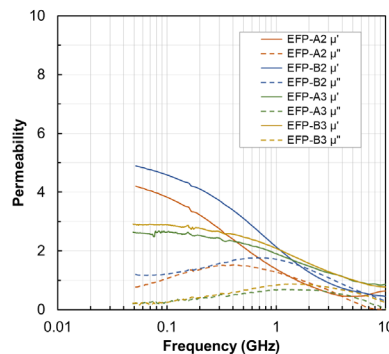
SPECIFICATIONS

[Properties of typical sample]

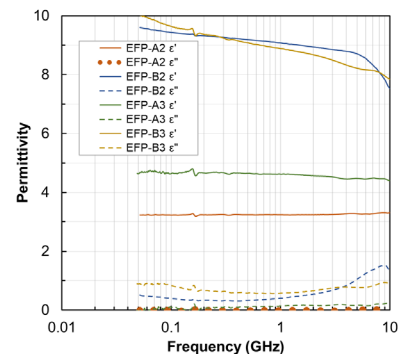
Property		Sample name	EFP-A2 (Ni-Zn ferrite)	EFP-B2 (Mn-Zn ferrite)	EFP-A3 (Ni-Zn ferrite)	EFP-B3 (Mn-Zn ferrite)
Before cured	Inventory		-	-	China, Korea, Taiwan, Philippines (The US, EU)	China, Korea, Taiwan, Philippines (The US, EU)
	Appearance		Black · High viscosity	Black · High viscosity	Black · viscosity	Black · High viscosity
	Specific gravity [Graduated cylinder, 25°C] (g/cm ³)		2.7	2.7	2.2	2.19
	Viscosity [BH type, 25°C] (mPa·s) 20rpm		15,000	32,000	32,000	37,400
	T 1 (Thixotropic index)		3.3	2.5		
	Potlife at 25°C		A few days	A few days	more than 2 weeks	more than 2 weeks
After cured	Curing condition		120°C - 2 hours	120°C - 2 hours	80°C - 30 mins	80°C - 30 mins
	Hardness	JIS K-7215 at 25°C Shore D	93	93	92	92
	Glass-transition temperature, Tg	TMA (°C)	100	100	85	81
	Coefficient of thermal expansion	Below Tg (×10 ⁻⁶ /°C)	2.3 (at 30~50 °C)	2.4 (at 30~50 °C)	3.6 (at 40~50 °C)	3.8 (at 40~50 °C)
		Above Tg (×10 ⁻⁶ /°C)	10.5 (at 160~180 °C)	10.7 (at 160~180 °C)	8.0 (at 120~130 °C)	9.3 (at 120~130 °C)
	Bending strength	JIS K-6911 t=3mm (MPa)	90	100	57	90
	Volume resistivity [500V]	JIS K-6911 at 25°C (Ω·cm)	1.9 × 10 ¹¹	1.5 × 10 ⁸	4.8 × 10 ¹²	1.3 × 10 ⁷ ※measured at 100V
	Storage		Frozen	Frozen	Refrigerated (cold)	Refrigerated (cold)



[Frequency dependence of permeability at low-frequency]



[Frequency dependence of permeability at high-frequency]



[Frequency dependence of permittivity at high-frequency]

APPLICATIONS

- Encapsulant for winding inductors
- Magnetic shield as noise suppression

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