HUNTSMAN

Enriching lives through innovation

Advanced Materials

Araldite® XB 5721	**100 pbw**
Aradur® XB 5723	**30 pbw**

Formulated epoxy system exhibiting very good impregnation capability

Applications

Ignitions coils

Processing

Vacuum casting

Properties

Very good dielectric properties
Very good mechanical properties
Excellent thermal shock resistance

Product data

(Guideline values)

XB 5721 Resin

Modified, solvent free epoxy resin containing an inorganic filler

Viscosity	at 60°C	ISO 3219	mPas	2'500 – 5'000 *
Specific gravity	at 25°C	ISO 2811-2	g/cm³	1.82 – 1.86 *
Flash point		DIN 51758	°C	>200
Filler content			%	63

As supplied form	Highly viscous, black liquid
Hazardous decomposition products	Carbon monoxide, carbon dioxide and other toxic gases and vapors if burned
Disposal	Regular procedures approved by national and/or local authorities

XB 5723 Hardener

Low viscous modified anhydride hardener

Viscosity	at 25°C	ISO 2555	mPas	200 – 320 *
Specific gravity	at 25°C	ISO 1675	g/cm³	1.18
Flash point		DIN 51758	°C	154

As supplied form	Clear, pale yellow liquid
Hazardous decomposition products	Carbon monoxide, carbon dioxide and other toxic gases and vapors if burned
Disposal	Regular procedures approved by national and/or local authorities

*Specified range

Storage

Store the components in a dry place in tightly sealed original containers. Under these conditions, the shelf life will correspond to the expiry date stated on the label. Partly emptied containers should be tightly closed immediately after use. For information on waste disposal and hazardous products of decomposition in the event of a fire, refer to the Material Safety Data Sheets (MSDS) for these particular products.

Processing

Resin XB 5721 contains fillers, which tend to settle over time. It is therefore recommended to carefully homogenize the complete contents of the container before use. To facilitate stirring and drum emptying the resin can be heated up to 60 to 80°C. In the storage vessels of the production equipment, the pre-filled products should be stirred up from time to time to avoid sedimentation and irregular metering

The casting mix is best prepared by heating up and homogenize the resin at 70 to 90°C and the hardener at 30 to 40°C in the component vessels. A brief degassing of both components under a vacuum of 1-3 mbar before metering and mixing enhances the dielectric properties of the castings.

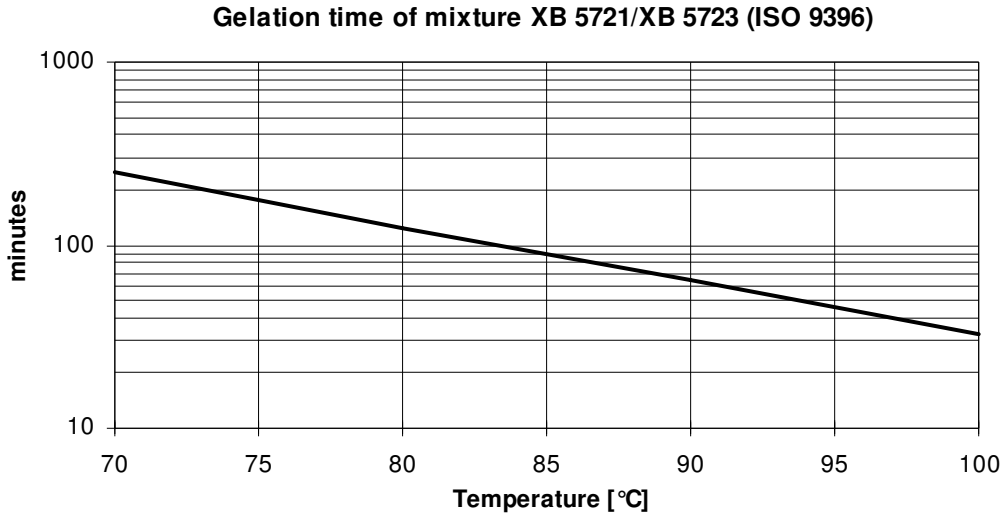
Mix ratio

	parts by weight	parts by volume
XB 5721 Resin	100	100
XB 5723 Hardener	30	46

Processing data (Guideline values)

Initial viscosity (Physica)	mPas	at 25°C	4000
		at 40°C	1300
		at 60°C	400
		at 80°C	120
Geltime (ISO 9396)	min	at 100°C	28 – 38 *
		at 120°C	9 – 12 *
Time to double initial viscosity (Physica)	min	at 60°C	100
		at 70°C	56
		at 80°C	37
Pot life (time to reach 15000 mPas) (Physica)	min	at 60°C	305
		at 80°C	94
Minimum cure time	h/°C	2 /75 + 1.5/75→110 + 2/110	

*Specified range



Properties (guideline values)

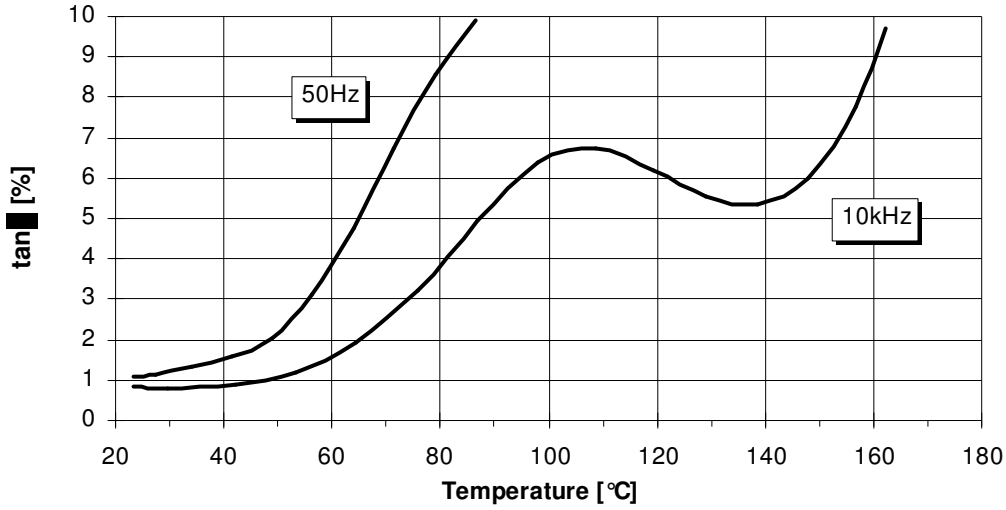
Guideline values at 23°C determined on standard test specimens cured for:
2h/75°C + 1.5h/75→120 + 2h/120°C

Physical and mechanical properties	Colour of castings			black
	Specific gravity	DIN 55990	g/cm^3	1.68
	Shore D hardness	DIN 53505	---	88
	Glass transition temperature (DSC)		IEC 1006	°C 70
	Tensile strength	ISO 527	MPa	68
	Elongation at break	ISO 527	%	1.4
	Elastic modulus	ISO 527	MPa	8500
	Flexural strength	ISO 178	MPa	105
	Surface strain	ISO 178	%	1.6
	Flexural modulus	ISO 178	MPa	7800
	Coefficient of linear thermal expansion	DIN 53752	K^{-1}	39×10^{-6}
	Water absorption			
	10 days at 23°C	ISO 62/80	%	0.31
	30 min at 100°C	ISO 62/80	%	0.32
	Thermal conductivity	ISO 8894/90	W/mK	0.54
	Double torsion test			
	Critical stress intensity factor (K_{IC})	PM 216/89	$MPa \cdot m^{1/2}$	2.7
	Specific energy at break (G_{IC})	PM 216/89	J/m^2	850

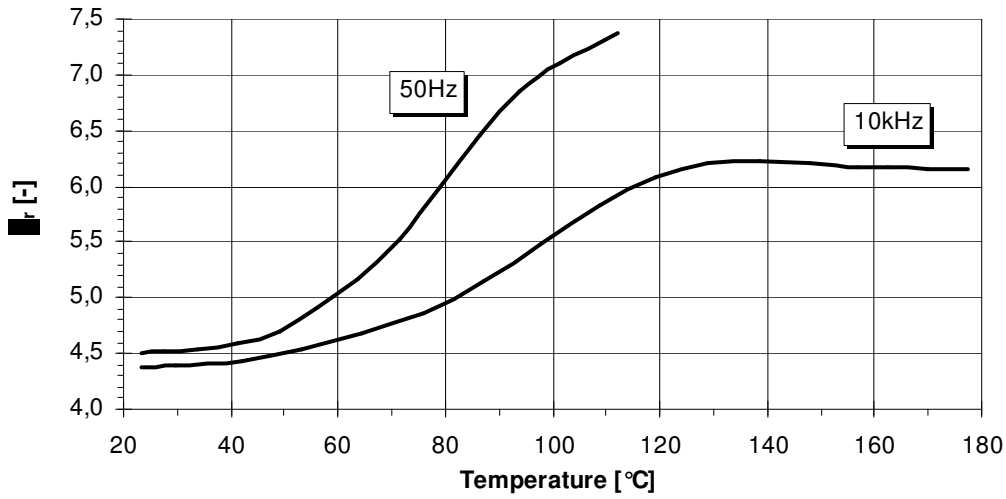
Electrical properties	Dissipation factor (tan δ, 10kHz)	DIN 53 483 IEC 60260	%	0.8
	Dielectric constant (ε_r, 10kHz)	IEC 60250	---	4.4
	Specific volume resistance (ρ)	IEC 93	Ω·cm	2.9×10^{15}
	Dielectric strength (2mm)	IEC 243-1	kV/mm	26
	Electrolytic corrosion	IEC 426	---	A-1
	Tracking resistance			
	with test solution A	IEC 112/79	---	CTI > 600-0.0
	with test solution B	IEC 112/79	---	CTI > 600M-0.0

Electrical properties
(plotted values)

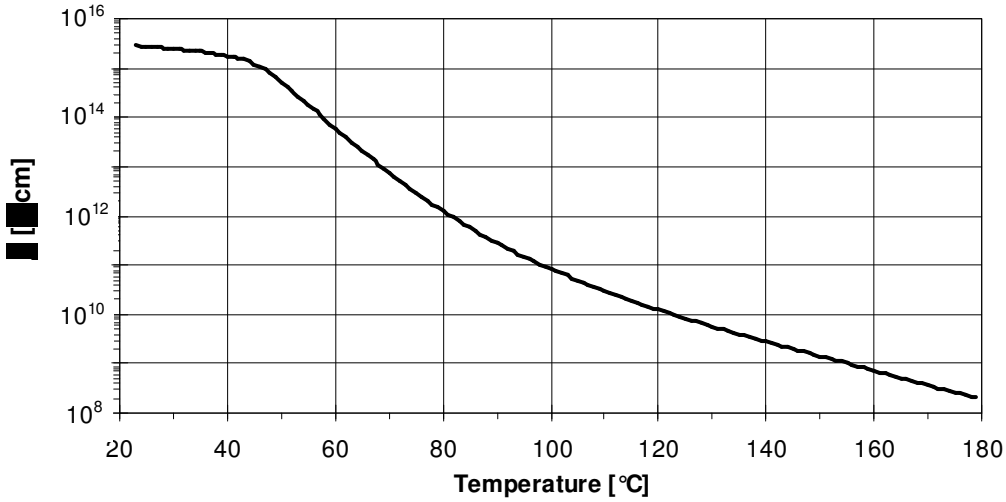
Dissipation factor tanδ vs temperature (IEC 250 / DIN 53483)



Dielectric constant ε_r vs temperature (IEC 250 / DIN 53483)



Volume Resistivity ρ vs temperature (IEC 93 / DIN IEC 93)



Legal Notice

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