

Advanced Materials

Araldite® XB 2252	100	pbw
Aradur® HY 2919	30	pbw

Optimally filled casting system for processing and curing at higher temperatures.

Application Transformers, filters, capacitors, coils etc.

Processing Methods Casting / vacuum casting.

Key Properties

- Good thermal shock resistance.
- Good dielectric properties.
- Good mechanical properties.
- Excellent thermal endurance.
- Suitable for thermal class F applications.

Product Data (Guideline Values)

Araldite® XB 2252 (BK)

Modified, solvent free epoxy resin with inorganic filler.

Viscosity at 23 °C	ISO 3219	mPa*s	5000 – 10000*
Specific gravity at 23 °C	ISO 2811	g/cm ³	1.57 – 1.62*
Appearance	Visual		Black liquid*

Aradur® HY 2919

Low viscosity, accelerated anhydride hardener.

Viscosity at 25 °C	ISO 2555	mPa*s	50 – 100*
Specific Gravity at 25 °C	ISO 2811	g/cm ³	1.18 – 1.22*
Appearance	Visual		Yellow-brown to red-brown clear liquid*

*Specified range

Processing Data (Guideline Values)

Mix Ratio

		Parts by weight	Parts by volume
XB 2252	Resin	100	100
HY 2919	Hardener	30	40

Gel Time, Viscosity and Curing

Mix viscosity at 60 °C	XB 2252 /HY 2919	Rheomat	mPa*s	300
Mix viscosity at 80 °C			mPa*s	55
Gel time at 60 °C	XB 2252 /HY 2919	Gelnorm	min	330
Gel time at 80 °C			min	100
Pot life at 80 °C (Time to reach 15000 mPa*s)			min	80
Standard curing cycle		3 hours at 80 °C + 3 hours at 110 °C		
Minimum curing cycle				

*Specified range

Processing and Storage (Guideline Values)

Preparation

XB 2252 contains fillers, which tend to settle over time. It is therefore recommended to carefully homogenize the complete contents of the container before use.

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.

Mixing

The casting mix is best prepared by heating the resin up to 40 – 50 °C before stirring in the hardener.

Brief degassing of the mix under 5 – 10 mbar vacuum improves the mixture homogeneity and enhances the dielectric properties of the castings.

Curing

To determine whether cross-linking has been carried to completion and the final properties are optimal, it is necessary to carry out relevant measurements on the actual object or to measure the glass transition temperature. Different gel and cure cycles in the customer's manufacturing process could lead to a different degree of cross-linking and thus a different glass transition temperature.

Storage Conditions

Store the components in a dry place according to the storage conditions stated on the label in tightly sealed original containers. Under these conditions, the shelf life will correspond to the expiry date stated on the label. After this date, the product may be processed only after reanalysis. 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.

Mechanical and Physical Properties (Guideline Values)

Determined on standard test specimen at 23°C. Cured for 3h/80°C + 3h/110°C.

Glass transition temperature	ISO 6721	°C		84
Shear modulus G' at RT	ISO 6721	MPa		2600
Thermal class	IEC 60085			F
Tensile modulus	ISO 527	MPa		5800
Tensile strength	ISO 527	MPa		40
Elongation at break	ISO 527	%		0.8
Flexural modulus	ISO 178	MPa		5800
Flexural strength	ISO 178	MPa		70
Thermal conductivity	ISO 8894-1	W/mK		0.5
Hardness	DIN 53505	Shore D		86
Flammability	UL 94	BK	Expected	V-0 (6 mm)
Water absorption	ISO 62/80			
1 day at 23°C		% by wt.		0.05
30 min at 100°C				0.15

Electrical Properties (Guideline Values)

Determined on standard test specimen at 23°C. Cured for 3h/80°C + 3h/110°C.

Dielectric loss factor (tan δ , 50Hz, 25°C)	IEC 60250	%		1.1
Dielectric constant (ϵ_r , 50Hz, 25°C)	IEC 60250			3.9
Volume resistivity (ρ , 25°C)	IEC 60093	Ω cm		10^{15}

Legal Notice

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