

## Advanced Materials

<b>Araldite<sup>®</sup> CW 2122-1</b>	<b>100</b>	<b>pbw</b>
<b>Aradur<sup>®</sup> HY 2123</b>	<b>34</b>	<b>pbw</b>

Filled casting resin with excellent impregnating capability for processing and curing at high temperatures.

**Application** Transformers, capacitors.

**Processing Methods** Casting / vacuum casting.

**Key Properties**

- Good dielectric properties.
- Good thermal shock resistance.
- Good mechanical properties.
- UL 94 approval V-0 for 1.5 mm thickness.

## Product Data (Guideline Values)

### **Araldite® CW 2122-1**

Modified, solvent free epoxy resin with mineral filler.

Viscosity at 25 °C	ISO 3219	Pa*s	20 – 40*
Specific gravity at 25 °C	ISO 2811	g/cm <sup>3</sup>	1.64 – 1.70*
Appearance	Visual		Red-brown liquid, viscous*

### **Aradur® HY 2123**

Low viscosity anhydride hardener containing a curing accelerator.

Viscosity at 25 °C	ISO 2555	mPa*s	50 – 100*
Specific gravity at 20 °C	ISO 2811	g/cm <sup>3</sup>	1.20
Appearance	Visual		Clear, yellow-brown liquid*

\*Specified range

## Processing Data (Guideline Values)

### Mix Ratio

		Parts by weight	Parts by volume
CW 2122-1	Resin	100	100
HY 2123	Hardener	34	48

### Gel Time, Viscosity and Curing

Mix viscosity at 80 °C	CW 2122-1 / HY 2123	Rheomat	mPa*s	450
Gel time at 100 °C		ISO 9396	min	23 – 28*
Pot life at 80 °C (Time to reach 15000 mPa*s)		Rheomat	min	110
Standard cure cycle		3 hours at 80 °C + 2 hours at 110 °C		
Minimum curing cycle		4 hours at 70 °C + 3 hours at 100 °C		

\*Specified range

## Processing and Storage (Guideline Values)

### Preparation

CW 2122-1 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

To prepare the casting mix the resin component should be homogenized in holding tank A at 60-70 °C under a vacuum of 1-5 mbar, the hardener component in holding tank B at 30-40 °C and a vacuum of 1-5 mbar. A metering unit should be used to feed the resin and hardener components to an impeller mixer.

### 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 1 h at 70°C + 2 h at 80°C + 2 h at 110°C.

Color of casting			Red-brown
Density of cured casting	ISO 1183		1.54
Glass transition temperature	ISO 11357	°C	110 – 120*
Thermal class	IEC 60085		H
Tensile modulus	ISO 527	MPa	6180
Tensile strength	ISO 527	MPa	58
Elongation at break	ISO 527	%	1.2
Flexural modulus	ISO 178	MPa	6270
Flexural strength	ISO 178	MPa	94
Impact strength	ISO 179	kJ/m <sup>2</sup>	8
Thermal linear coefficient	ISO 11359-2		
20 – 80°C		ppm/K	50
90 – 110°C			70
Thermal conductivity	ISO 8894-1	W/mK	0.51
Hardness	DIN 53505	Shore D	81
Flammability	UL 94	E96722	V-0 (1.5 mm)
Water absorption	ISO 62/80		
1 day at 23°C		% by wt.	0.1
30 min at 100°C			0.16

\*Specified range

## Electrical Properties (Guideline Values)

Determined on standard test specimen at 23°C. Cured for 1 h at 70°C + 2 h at 80°C + 2 h at 110°C.

Dielectric strength (1 mm specimen)	IEC 60243-1	kV/mm	33
Dielectric loss factor (tan δ, 50Hz, 25°C)	IEC 60250	%	1.3
Dielectric constant (ε <sub>r</sub> , 50Hz, 25°C)	IEC 60250		4.1
Volume resistivity (ρ, 25°C)	IEC 60093	Ω cm	10 <sup>15</sup>
Tracking resistance CTI	IEC 60112	grade	> 600
Electrolytic corrosion	IEC 60426	grade	A-1

# Legal Notice

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