HUNTSMAN

Enriching lives through innovation

Advanced Materials

Araldite® CW 1195-1	**100**	**pbw**
Aradur® HW 1196	**100**	**pbw**

Optimally filled casting system for processing and curing at high temperatures

Application	Power Semiconductors. Thyristors / Diode modules Rectifier modules.
Processing Methods	Casting / vacuum casting.
Key Properties	Low thermal expansion. Excellent temperature cycling resistance. Flammability UL 94 V-0 (6.0 mm).

Product Data (Guideline Values)

Araldite® CW 1195-1

Modified, solvent free epoxy resin with inorganic filler.

Viscosity at 20°C	ISO 2555	Pa*s	50.0 – 120.0*
Specific Gravity at 20°C	ISO 2811-2	g/cm³	1.60 – 1.70*
Appearance	Visual		Beige. high viscosity liquid*

Araldite® CW 1195-1 BLACK

Modified, solvent free epoxy resin with inorganic filler.

Viscosity at 20°C	ISO 2555	Pa*s	50.0 – 120.0*
Specific Gravity at 20°C	ISO 2811-2	g/cm³	1.60 – 1.70*
Appearance	Visual		Black. high viscosity liquid*

Aradur® HW 1196

Accelerated anhydride prefilled hardener with inorganic filler.

Viscosity at 20°C	ISO 2555	Pa*s	4.5 – 12*
Specific Gravity at 20°C	ISO 2811	g/cm³	1.77 – 1.83*
Appearance	Visual		Beige, viscous liquid*

*Specified range

Processing Data (Guideline Values)

Mix Ratio

		Parts by weight	Parts by volume
CW 1195-1	Resin	100	100
HW 1196	Hardener	100	92

Gel Time, Viscosity and Curing

Mix Viscosity at 40°C	CW 1195-1 /HW 1196	Rheomat	mPa*s	3600
Mix Viscosity at 60°C			min	850
Gel time at 140°C		ISO 9396	Min	6 - 8
Pot life at 80°C (Time to reach 15000 mPa*s)		Rheomat	min	150
Standard Cure Cycle		6 hours at 140°C or 2 hours at 80°C + 6 hours at 140°C		

Processing and Storage (Guideline Values)

Preparation

CW 1195-1 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

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 6h/140°C.

Glass transition temperature	ISO 11357-2	°C		130 – 155*
Thermal Class	IEC 60085			H
Tensile modulus	ISO 527	MPa		11100
Tensile strength	ISO 527	MPa		44
Elongation at break	ISO 527	%		1.3
Flexural Strength	ISO 178	MPa		112
Impact Strength	ISO 179	kJ/m^2		6
Thermal linear coefficient	ISO 11359-2			
Alpha 1 Alpha 2		ppm/K		28 90
Thermal conductivity	ISO 8894-1	W/mK		0.65
Hardness	DIN 53505	Shore D		95
Flammability	UL 94		File E96722*	V-0 (6 mm)
Water absorption	ISO 62			
1 day at 23°C 30 min at 100°C		% by wt.		0.02 0.08

*Specified range

Electrical Properties (Guideline Values)

Determined on standard test specimen at 23°C. Cured for 6h/140°C.

Dielectric strength (2 mm specimen)	IEC 60243-1	kV/mm	14
Dielectric loss factor (tan δ, 50Hz, 25°C)	IEC 60250	%	0.5
Dielectric constant (εr, 50Hz, 25°C)	IEC 60250		3.7
Volume resistivity (ρ, 25°C)	IEC 60093	Ω cm	10^{16}
Tracking resistance CTI	IEC 60112	grade	> 600
Electrolytic corrosion	IEC 60426	grade	AN-1.2

Legal Notice

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