
® Araldite Casting Resin System

Araldite®	CW 1446 BDF	100 pbw
Aradur®	HY 2919	24 pbw

Casting system exhibiting good impregnation capability

TV high-voltage components (FBT's semi-conductor power components)

Applications

Casting / Vacuum casting

Processing

Good dielectric properties
Good resistance to cyclic temperature variations
Flammability: UL 94 approval V-0 for 6 mm layer

Properties

Product data

(Guideline values)

Modified, solvent free epoxy resin with inorganic filler

Araldite CW 1446 BDF	Viscosity	at 50°C	ISO 3219	mPa s	3800 - 6800
	Specific gravity	at 20°C	ISO 2811	g/cm ³	1.75-1.83
	Flash point		ISO 1523	°C	>200
	As supplied form		Highly viscous, grey-brown liquid		
	Hazardous decomposition products		Carbon monoxide, carbon dioxide and other toxic gases and vapour if burned		
	Disposal		Regular procedures approved by national and/or local authorities		

Low viscosity, accelerated anhydride hardener

Aradur HY 2919	Viscosity	at 25°C	ISO 2555	mPa s	50 - 100
	Specific gravity	at 25°C	DIN 53217	g/cm ³	1.18 – 1.22
	Flash point		ISO 1523	°C	165
	As supplied form		Clear, pale yellow or yellow liquid		
	Hazardous decomposition products		Carbon monoxide, carbon dioxide and other toxic gases and vapours if burned		
	Disposal		Regular procedures approved by national and/or local authorities		

Storage

Store the components in a dry place at RT, 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.

Processing

The filled resin component should be stirred and homogenized in the original container before use.

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.

Mix ratio

Araldite CW 1446 BDF	parts by weight	100
Aradur HY 2919	parts by weight	24

Processing data (Guideline values)

Initial viscosity (Epprecht TV)	mPa s	at 25°C	3500
		at 40°C	1100
		at 60°C	300
Pot life to 1500 mPas (Epprecht TV)	min	at 60°C	97
Pot life to 15 000 mPas (Epprecht TV)	min	at 40°C	525
		at 60°C	220
Minimum curing time	h	at 100°C	5.5

Properties

Guideline values determined on standard test specimens cured for 6 h/60°C+6 h/100°C

Colour of castings				brown
Specific gravity	at 25°C	DIN 55 990	g/cm ³	1.66
Shore D hardness (4 mm plate)	at 25°C	DIN 53 505		92
Glass transition temperature/ T _g midpoint		ISO 11357-2	°C	95
Martens deflection temperature		DIN 53 458	°C	85
Flexural strength				
max. bending stress $\sigma_{b \max}$	at 25°C	ISO 178	MPa	100
surface strain (failure)	at 25°C	ISO 178	%	1.5
Impact strength	at 25°C	ISO 179	kJ/m ²	4-7
Compressive strength				
max. compressive stress $\sigma_{d \max}$	at 25°C	ISO 604	MPa	105-115
Tensile strength				
max. tensile stress $\sigma_{z \max}$	at 25°C	ISO 527	MPa	47
elongation at failure	at 25°C	ISO 527	%	1.5
Elastic modulus from flexural test	at 25°C	ISO 178	MPa	7400
Flammability		UL 94		V-0 (6 mm)
Water absorption				
1 day	at 23°C	ISO 62/80	%	0.06
30 min	at 100°C		%	0.14
Coefficient of linear thermal expansion	at 20-81°C at 95-100°C	ISO 11359-2	ppm/K ppm/K	48- 134-
Thermal conductivity	at 22-24°C	ISO 8894-1	W/mK	0.67
Electrolytic corrosion		IEC 60426	grade	A-1
Tracking resistance		IEC 112/79		CTI>600
Dielectric loss factor (tan δ , 50Hz, 25°C)		IEC 60250	%	1.5
Dielectric constant (ϵ_r , 50Hz, 25°C)		IEC 60250		4
Volume resistivity (ρ , 25°C)		IEC 60093	Ωcm	10 ¹⁵
Dielectric strength				
20 s value for 2 mm plate (50 Hz)	at 23°C	IEC 60243-1	kV/mm	25

Industrial hygiene

Mandatory and recommended industrial hygiene procedures should be followed whenever our products are being handled and processed. For additional information please consult the corresponding Safety Data Sheets and the brochure "Hygienic precautions for handling plastics products".

Handling precautions

Safety precautions at workplace:	
protective clothing	yes
gloves	essential
arm protectors	recommended when skin contact likely
goggles/safety glasses	yes
respirator/dust mask	recommended
Skin protection	
before starting work	Apply barrier cream to exposed skin
after washing	Apply barrier or nourishing cream
Cleansing of contaminated skin	Dab off with absorbent paper, wash with warm water and alkali-free soap, then dry with disposable towels. Do not use solvents
Clean shop requirements	Cover workbenches, etc. with light coloured paper. Use disposable beakers, etc.
Disposal of spillage	Soak up with sawdust or cotton waste and deposit in plastic-lined bin
Ventilation:	
of workshop	Renew air 3 to 5 times an hour
of workplace	Exhaust fans. Operatives should avoid inhaling vapours.

First Aid

Contamination of the **eyes** by resin, hardener or casting mix should be treated immediately by flushing with clean, running water for 10 to 15 minutes. A doctor should then be consulted.

Material smeared or splashed on the **skin** should be dabbed off, and the contaminated area then washed and treated with a cleansing cream (see above). A doctor should be consulted in the event of severe irritation or burns. Contaminated clothing should be changed immediately.

Anyone taken ill after **inhaling** vapours should be moved out of doors immediately. In all cases of doubt call for medical assistance.

Note

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