
®Araldite Casting Epoxy System

CW 5725	Resin	100 pbw
HY 5726	Hardener	28 pbw

Optimally filled casting resin system with good impregnation capability for processing and curing at higher temperatures

Car ignition coils

Applications

Vacuum casting

Processing

Very good thermal shock resistance
Very good thermal endurance

Properties

Product data

(Guideline values)

ARALDITE CW 5725	Modified, solvent-free epoxy resin containing an inorganic filler			
Viscosity	at 60°C	ISO 12058	mPa s	6'300
Specific gravity	at 25°C	DIN 53 217	g/cm ³	1.91
Flash point		ISO 1523	°C	>200
Filler content			%	65
As-supplied form	black, highly viscous 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			

ARADUR HY 5726	Liquid, accelerated anhydride hardener			
Viscosity	at 25°C	ISO 12058	mPa s	70
Specific gravity	at 25°C	DIN 53 217	g/cm ³	1.19
Flash point		ISO 1523	°C	160
As-supplied form	clear, yellowish 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 2-40°C, 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

Because of the tendency to sedimentation of the filler, filled components in principle require stirring before removal from the original containers. To avoid errors in dosage this step is especially important when removing only part of the contents.

To facilitate stirring and removal, highly-filled components are heated to 60-80°C in the original container (e.g. overnight in an oven).

To prepare the casting mix the resin component should be homogenized in holding tank A at 80-90°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.

Mix ratio	parts by weight		parts by volume	
	ARALDITE CW 5725	100	100	
ARADUR HY 5726	28		45	

Processing data (Guideline values)	Initial viscosity (Rheolab MC 20)	mPa s	at 25°C	
			at 40°C	
			at 60°C	420
			at 80°C	240
	Time to double initial viscosity (Rheolab MC 20)	min	at 60°C	190
			at 70°C	110
			at 80°C	50
	Pot life (time to reach 15,000 mPas)	min	at 60°C	480
			at 80°C	130
	Geltime (Gelnorm, ca 20 g RHM)	min	at 70°C	310
			at 80°C	160
			at 90°C	80
	Minimum curing time	h/°C	2.5/90+2.5/130	

Processing Recommended guidelines (depending on equipment used)

	Araldite CW 5725		Hardener HY 5726	Ignition Coils
Degasing of components				
<i>Temperature</i>	80 °C		RT ≤ to ≤ 40 °C	95 to 105 °C
<i>Pressure</i>	<1 to 2 mbar		<1 to 2 mbar	
<i>Time</i>				2 hours
Pipes to mixing unit				
<i>Temperature</i>	80 °C		RT (≥ 25 °C)	
Mix ratio				
<i>parts by weight</i>	100	± 2 pbw	28	
<i>parts by volume</i>	100	± 2 pbv	45	
Mixing head and chamber				
<i>Temperature</i>			60 ≤ 68 °C	
Prevacuum				
<i>Pressure</i>			≤ 1 mbar	
<i>Time to reach vacuum</i>			≥ 20 sec	
Potting				
<i>Pressure</i>			≥ 5 mbar	
Postvacuum				
<i>Pressure</i>			≥ 5 mbar	
<i>Time</i>			≥ 5 sec	
Curing schedule				
	Batch oven (discontinuous)		Tunnel oven (continuous)	
	30 min 60-75°C 60 min 75-85°C 60 min 85°C 30 min 85-130°C	zone 1	appr. 83°C 2,5 hours	
	120 min 130°C	zone 2	appr. 130°C 2.5 hours	
Total curing time	5 hrs		5 hrs	

After curing, the components should be cooled in an unheated cabinet to exclude draughts and extremes of temperature.

Properties

Guideline values determined on standard test specimens at 23 °C
cured for 2.5 h/90 °C+2.5 h/130 °C

Physical and mechanical properties

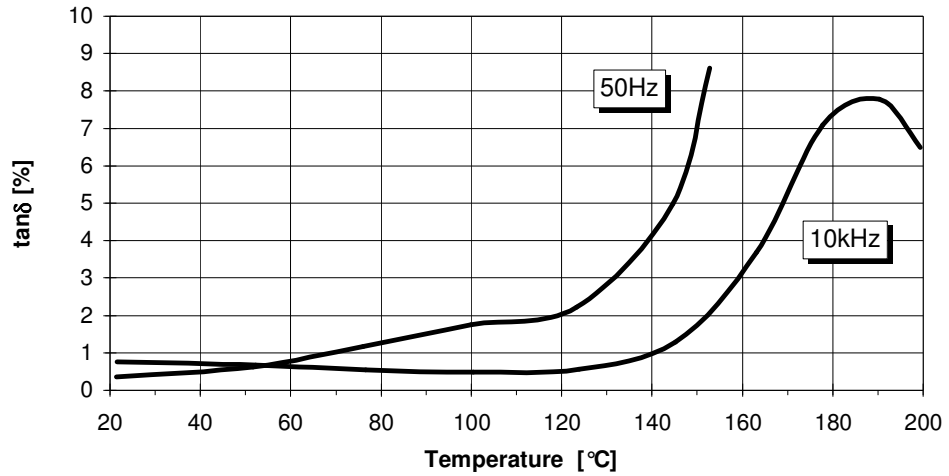
Colour of castings				black
Specific gravity	DIN 55 990	g/cm ³		1.71
Shore D hardness (4 mm plate)	DIN 53 505			90
Flexural strength				
max. bending stress	ISO 178	MPa		90
surface strain (failure)	ISO 178	%		1.4
Elastic modulus in flexion	ISO 178	MPa		7800
Double torsion test	CG 216-0/89			
Critical stress intensity factor (K _{IC})		Mpa·m ^{1/2}		1.84
Specific energy at break (G _{IC})		J/m ²		410
Glass transition temperature (DSC)	IEC 61006	°C		144
Coefficient of linear thermal expansion	DIN 53 752	ppm/K		38
Thermal conductivity	VDE 0304	W/mK		0.65
Water absorption				
10 days at 23 °C	ISO 62	%by wt.		0.08
30 min at 100 °C	ISO 62	%by wt.		0.05

Electrical properties

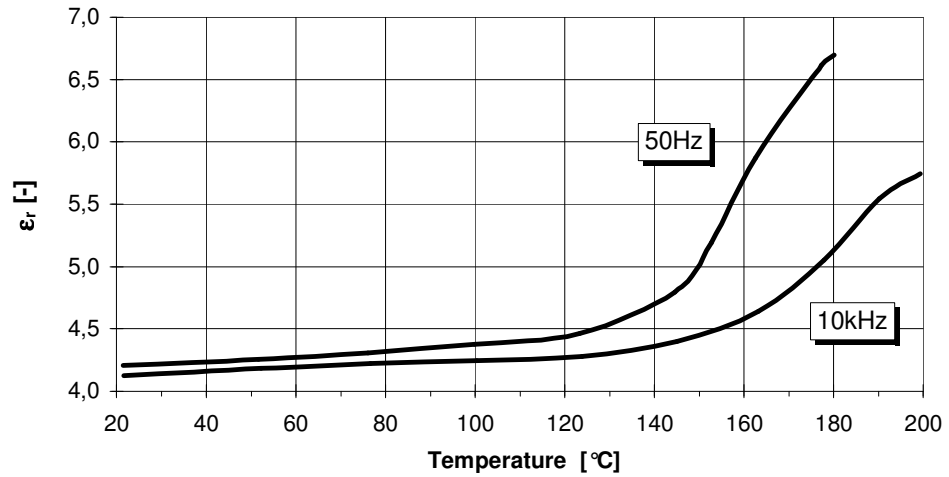
Dielectric strength	on 2 mm plate at 23 °C	IEC 60243-1	kV/mm	25
	on 1 mm plate at 23 °C	IEC 60243-1	kV/mm	41
Tracking resistance	with test solution A	IEC 60112		CTI>600-0.1
	with test solution B	IEC 60112		CTI>600M-0.1
Electrolytic corrosion	IEC 60426	grade		A-1

Properties

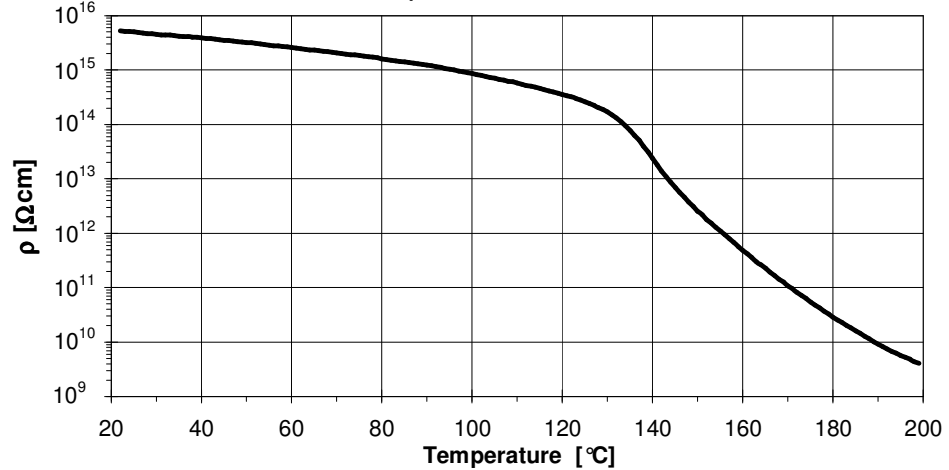
Dissipation factor $\tan\delta$ vs temperature (IEC 250/DIN 53483)



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



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



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".

Personal hygiene	Safety precautions at workplace:	
	protective clothing	yes
	gloves	essential
	arm protectors	recommended when skin contact likely
	goggles/safety glasses	yes
	respirator/dust mask	no
	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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