

**Electrical Insulation Materials**



**Light Electrical**

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**®Araldite Casting Resin System**

<b>Araldite®</b>	<b>CY 220-1</b>	<b>100</b>	<b>- pbw</b>
<b>Araldite®</b>	<b>CY 223</b>	<b>-</b>	<b>100 pbw</b>
<b>Hardener</b>	<b>HY 5052</b>	<b>30</b>	<b>35 pbw</b>

**Casting systems for processing at room temperature or slightly higher temperature**  
**Curing at high temperatures**

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Encapsulating or potting of low voltage and electronic components  
Embedding or end sealing of components such as relays or plug and connector bars

**Applications**

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Casting  
Short gel and curing times  
The viscosity of the casting resin system may be optimally adjusted to a particular application by mixing Araldite CY 220-1 and CY 223

**Processing**

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Good dielectric properties  
High resistance to moisture

**Properties**

# Product data

(Guideline values)

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## Modified, medium viscosity solvent-free epoxy resin

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<b>Araldite CY 220-1</b>	Viscosity	at 25°C	mPa s	ca. 5000
	Specific gravity	at 25°C	g/cm <sup>3</sup>	1.15
	Flash point		DIN 51 758 °C	190-200
	Epoxy content		Eq/kg	5.0
As supplied form	Pale 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			

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## Modified, low viscosity solvent free epoxy resin

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<b>Hardener CY 223</b>	Viscosity	at 25°C	mPa s	ca. 500
	Specific gravity	at 25°C	g/cm <sup>3</sup>	1.15
	Flash point		DIN 51 758 °C	160
	Epoxy content		Eq/kg	6.25
As supplied form	Clear, pale yellow liquid			
Hazardous decomposition products	Carbon monoxide and dioxide if burned			
Disposal	Regular procedures approved by national and/or local authorities			

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## Formulated, low viscosity hardener based on cycloaliphatic polyamines

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<b>Hardene HY 5052</b>	Viscosity	at 25°C	mPa s	ca. 50
	Specific gravity	at 25°C	g/cm <sup>3</sup>	0.94
	Flash point		DIN 51 758 °C	110
As supplied form	Clear, slightly 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			

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## Storage

Store the components in a dry place at 18-25°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

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	<b>System</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Mix ratio</b>	Araldite CY 220-1	parts by weight	100	80	50	—
	Araldite CY 223	parts by weight	—	20	50	100
	Hardener HY 5052	parts by weight	30	31	32	35

	<b>System</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Processing data</b> (Guideline values)	Initial viscosity (Hoeppler)					
	at 25°C	mPa s	2740	2210	1320	590
	at 40°C	mPa s	670	370	260	130
	Time to double initial viscosity (Hoeppler)					
	at 25°C	min	55	43	40	50
	at 40°C	min	32	28	20	32
	Pot life to 1500 mPa s (Hoeppler)					
	at 25°C	min	100	118	135	170
	at 40°C	min	66	65	75	90
	Gel time (hot plate)					
	at 60°C	min	23	26	36	31
	at 80°C	min	15	13	14	13
	at 100°C	min	6.5	6.5	7	5.5
	Minimum curing time					
	at 100°C	h	1	1	1	1
	at 80°C	h	3	3	3	3-4

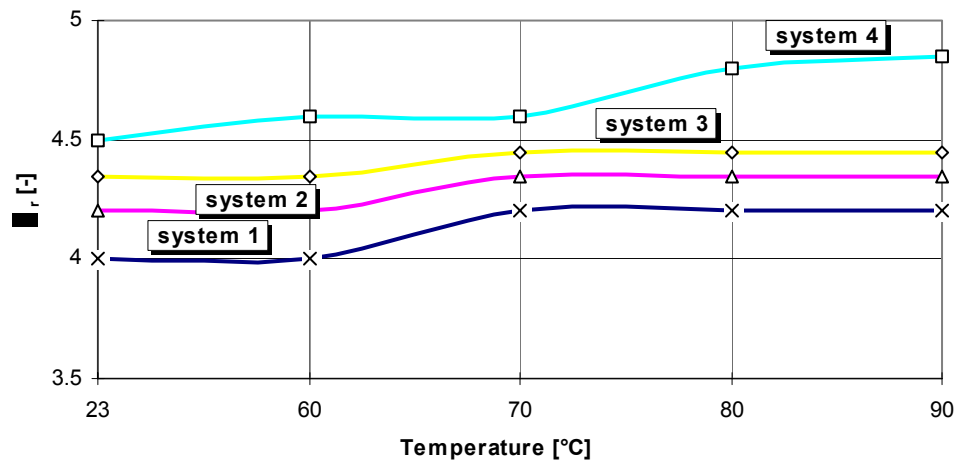
# Properties

Guideline values determined on standard test specimens cured for 1 h/100°C

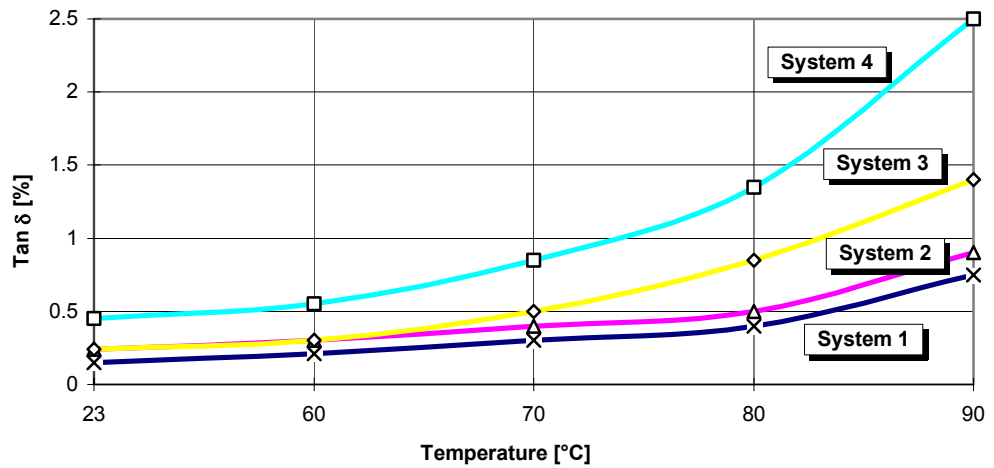
<b>System</b>				<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Colour of castings				yellowish→			
Shore D hardness (4 mm plate)	at 25°C	DIN 53 505		73	73	73	73
Glass transition temperature/ Tg midpoint (DSC,Mettler TA 4000)			°C	117	115	113	112
Tensile strength							
max. tensile stress	at 25°C	ISO/R 527	MPa	86	84	83	77
elongation at break	at 25°C	ISO/R 527	%	5.8	6.0	6.1	6.6
Elastic modulus from tensile test	at 25°C	ISO/R 527	MPa	3038	2961	2843	2657
Water absorption							
10 days at	at 23°C	ISO 62	%	0.45	0.50	0.63	0.73
30 min at	at 100°C	ISO 62		0.21	0.24	0.34	0.34
Electrolytic corrosion		DIN 53 489	grade	A-1	A-1	A-1	A-1
Tracking resistance		IEC 112		CTI>600-0.2→			
Electric strength							
20 s for 2 mm plate (50 Hz)	at 23°C	IEC 243	kV/cm	21	19	19	18

# Properties

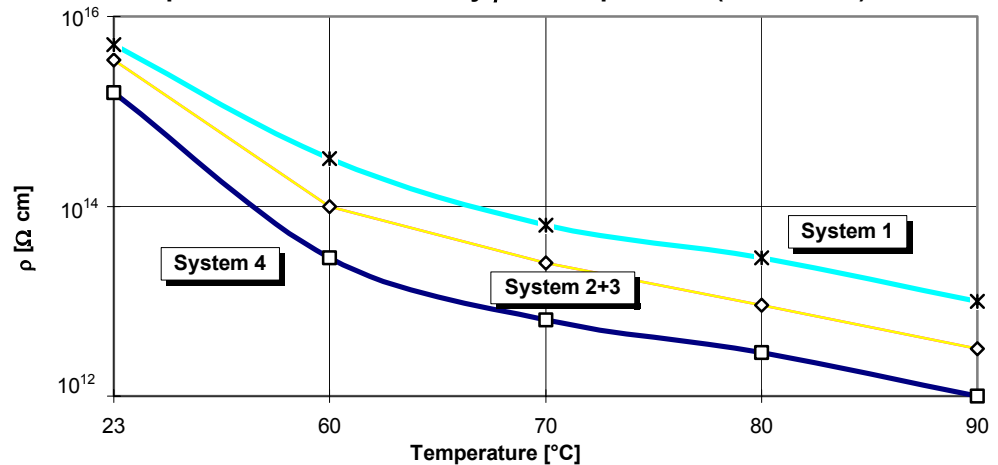
Dielectric constant  $\epsilon_r$  vs temperature at 50 Hz (DIN 53483)



Dissipation factor  $\tan \delta$  vs temperature at 50 Hz (DIN 53483)



Specific volume resistivity  $\rho$  vs temperature (DIN 53482)



# Industrial hygiene

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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".

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<b>Handling precautions</b>	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.	

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**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.

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**Note**

Araldite® is a registered trademark of Huntsman LLC or an affiliate thereof in one or more countries, but not all countries.

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